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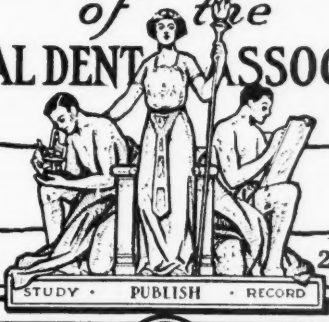

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Surgical Results in the Preparation of the Mouth for Dentures.—*Colburn.*

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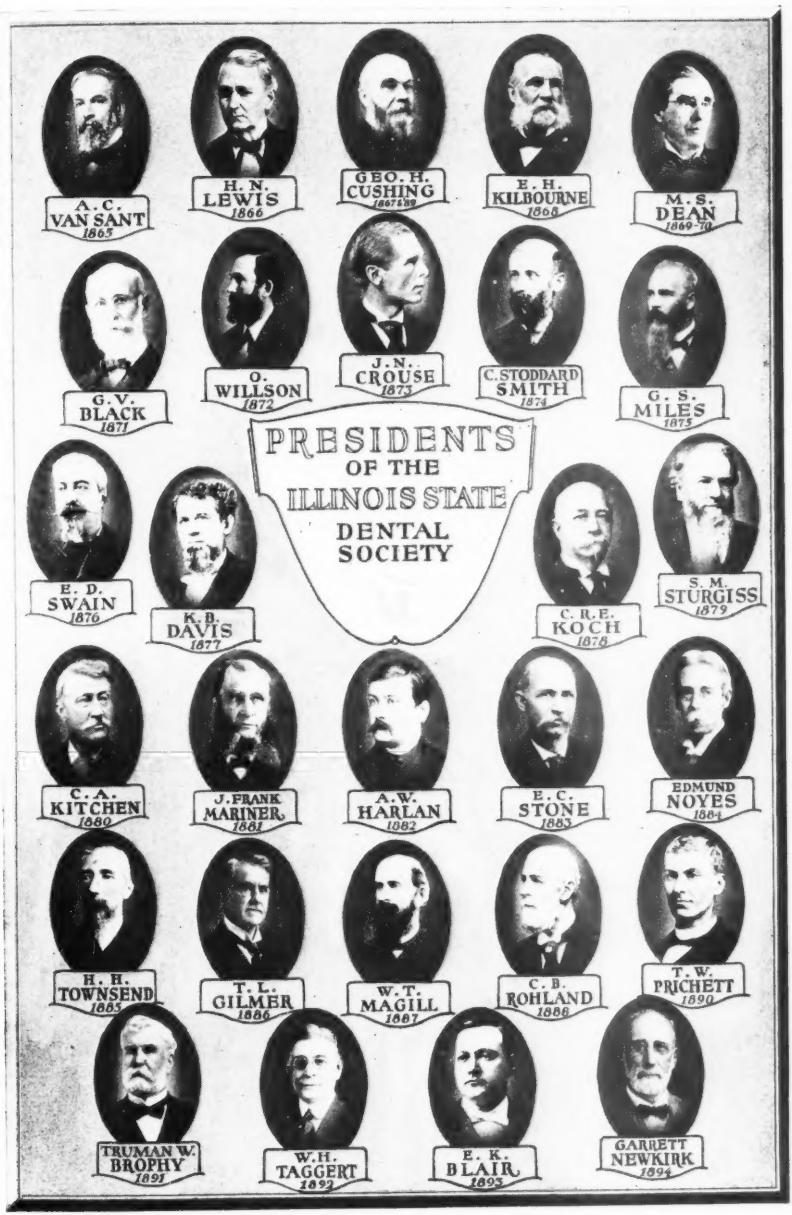
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Original Communications.

EXPERIMENTAL RESEARCHES UPON THE PHYSIOLOGICAL MORPHOLOGY OF THE UPPER POSTERIOR SMALL INCISORS OF RABBITS.[1]

By Angelo Chiavaro, M. D., D. D. S., Professor of Dentistry in the Royal University of Rome, Rome, Italy.

AS IS known, the rabbit has in its intermaxillary bone two incisors, at the back of which and close to, almost on a level with the gum, there are another two incisors, about half the size of the anterior. These we will call *upper posterior small permanent incisors.*

The lower incisors are two only.

In a newly born rabbit there are in the upper jaw two anterior permanent incisors and, behind these, two small incisors, which F. Emmanuel Rousseau called *upper medium incisors,* or *upper temporary incisors* and which are not the same small upper posterior permanent incisors of the adult rabbit.

Some days after birth, besides the two series of anterior and medium upper incisors, another two small incisors erupt, behind the medium or temporary ones.

Thus, after some days, in the intermaxillary jaw-bone of the rabbit, there are, looking from the front backwards, six incisors, two by two. As soon as the third small incisors are fully grown, the medium temporary incisors are shed and the third small incisors gradually move forward until, with their anterior face, they come close to the base of the posterior surface of the anterior incisors, which cover in length for about one millimetre outside the gum line, but are embedded in the bone for more than five millimetres (Figure 4).

As we know, distally to the upper and

[1](The exceptional researches have been made in the Institute of Comparative Anatomy of the R. University of Rome, directed by Prof. B. Grassi.)

lower incisors there is a large anodontic space (diastema)[2].

The adult rabbit has three premolars and three molars in the upper jaw, two premolars and three molars in the lower. The upper and lower premolars are permanent teeth, which on the eighteenth day after birth have taken the place of the same number of temporary molars, which have been shed (Delalande, 1812). The molars are permanent and they develop in about the same time as the premolars.

The formula of the permanent teeth of a rabbit (Thompson) is as follows:

$$1.\ \frac{2-2}{1-1},\ c.\ \frac{0-0}{0-0},\ p.\ m.\ \frac{3-3}{2-2},\ m.\ \frac{3-3}{3-3} = \frac{16}{12} = 28.$$

It is known that the teeth of the rabbit have a persistent dentin papilla, therefore there is continual growth.

The common character of the masticatory function of the Rodentia is the to and fro movement of the lower jaw.

In the rodents belonging to the sub-order of the *Duplicidentata,* that is in the family of *Leporidae* (hares and rabbits) and *Lagomydae,* the mastication is carried out by a simple up and down movement (ginglymus) of the lower jaw on the upper.

In the sub-order of the Simplicidentata is characteristic the mobility of each half of the lower jaw; to its to and fro movement is added a lateral masticatory movement of each half of the lower jaw upon the corresponding half of the upper, for the said articulation of the two halves of the lower jaw in the region which corresponds to the symphysis of the Duplicidentata.

When speaking of the teeth of the rodents, my dear master, Prof. B. Grassi, in his lectures on Zoology and Comparative Anatomy while I was student in '90, was regretting that no one had tried to explain the function of the upper posterior small incisors of the rabbit, and, up to the present, no one has brought forward contribution for the explanation of the subject. In fact, the authors have limited their observations to the simple inspection of the parts, from which they have deducted that the small incisors (called *dentes incisivi minores,*) as Gerhardt says, are certainly not of any special use to the animal.

Therefore, being encouraged and advised by my master, I began researches on this subject with the purpose of enlightening it.

For the purpose I decided to extract from an adult rabbit the only upper anterior incisors and from another rabbit of the same age the only upper posterior small incisors.

On February 15th, on the first rabbit, age three months, with a small fissure dental bur, I made under the gum tissue a cut upon the external wall of the intermaxillary bone, in the region and direction of each upper anterior incisor and of about the same length of its root; with a forceps for upper root the extraction of the two incisors was very easily made and they came out without any fracture.

The same day I operated on the second rabbit. With a still smaller fissure bur, I made a cut upon the internal wall of the intermaxillary bone in the region and direction of each posterior small incisor, and with an enamel chisel, which I used as a lever between the posterior face of each anterior incisor and the anterior face of the small posterior incisor corresponding, I found that hardly any force was necessary to extract them.

I treated the wounds with Tincture of Iodine and put the rabbits on liquid diet; after two days the wounds were healed.

For a month and a half I fed the rabbits on vegetables, and after this time I changed their meal with only hard bread and water. After twenty days of this last diet the local conditions of the first

[2]In the common rabbit at the age of three months this space measures 25 millimetres in length from the distal surface of the incisors to the mesial surface of the premolars.

rabbit, from which I extracted the anterior incisors, are well demonstrated by the photograph shown in Figure 1, where is noticeable the enormous lengths reached by the lower incisors, of which the right, which is the longest, is twenty millimeters long, while the same incisor in the other rabbit is only six millimeters long.

The right posterior small incisor is out of place with a labial inclination; the same thing happened with the left, but in less measure. The gum mucous membrane and the lip are wounded and swollen. This rabbit weighs much less than the other, which is well nourished and whose peridental conditions could be very well detected by the photograph reproduced in Figure 2. In this last rabbit the upper and lower incisors are of a normal length. The mastication was also almost normal. For some time the mucosa of the region where the two posterior small incisors were extracted was swollen, around a lesion of continuity, on the bottom of which the bone tissue was seen to be bare, and on which the lower incisors occlude with their cutting margins.

To my great surprise on April 15th, that is two months after the extraction, I could observe in the medium line of the upper posterior small incisors region, the presence of *a new small upper posterior median incisor,* with which occluded the cutting edges of the mesial corners of the two lower incisors. The strange and unforseen results of this experiment is worthy of ulterior researches, which I hope later on to accomplish.

From this experiment, from the anatomical examination of the incisors of the rabbit, and from the physiological morphology of human teeth (on which I have recently written a publication) I am convinced that the upper posterior small incisors of the rabbit have two functions, of which one is *masticatory,* the other is *protective of the mucosa.*

The masticatory function is evident if one observes the Figure 3, in which one can see that while the cutting edge of the upper anterior incisor is posteriorly abraded in sloping direction, labio-lingually from below upward, the cutting edge of the small posterior incisor is anteriorly abraded in a sloping, but less accentuated direction, linguo-labially from below to above.

The two abraded surfaces form two inclined planes converging to the contact line between the anterior incisor and the posterior small incisor; in the angle thus formed by the two inclined planes occlude during the rest position the cutting edge of the inferior incisor.[3]

During the mastication the lower incisor, moving to and fro, slides with its cutting edge from one extremity to the other of the two inclined planes formed by the margins of the two upper incisors, in the same manner as happens in the mastication between the inclined planes made by the cusps of the posterior lower teeth of the man with the inclined planes of the homologous cusps of the upper teeth.

The formation and direction of these inclined planes made upon the lingual surface of the upper anterior incisors, upon the labial surface of the upper posterior small incisors and upon the lingual surface of the lower incisors are clearly explained by the dynamics of the mastication, which depends upon the hinge articulation of the lower jaw.

The upper small posterior incisors

[3]These cutting edges of the lower incisors so wedging between the upper anterior incisors and the two posterior ones, would push aside the anterior ones from the posterior if special anatomical conditions did not help to increase the resistance of the upper posterior small incisors in the mass of the bone. Altho these latter stand only one millimetre out of the peridental tissues, their total length in the adult rabbit is of about 10 millimetres; they, being curved in the direction of their length, the strength which during the mastication lies upon their free margin is, therefore, not transmitted to the end of their roots and to the persistent dentin papilla. They are also deeply implanted in the mass of the intermaxillary bone, which in correspondence of their palatal surface, especially at the region of their extremity, has relatively an enormous thickness, which constitutes, according to my opinion, the principal coefficient of resistance of these small teeth. (Figures 3 and 4.)

with their *incisive surface* (the incisive edge becomes in fact a masticatory surface), complete the masticatory surface

Figure 1.

Lower incisors of a rabbit greatly elongated, 45 days after extraction of the upper anterior incisors.

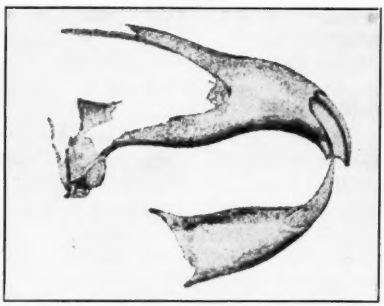
of the anterior incisors, (Figure 3). Therefore the six incisors of the rabbit accumulate the function of the canines

Figure 2.

New upper posterior median small incisor which appeared two months after the extraction of the two permanent upper posterior small incisors.

and premolars, which are absent in Duplicidentata, because the food not only becomes chipped, but also partly triturated by the incisors, and so prepared, it goes directly between the masticatory surfaces of the posterior teeth, while the surplus, passing between the anodontic spaces of the two sides, accumulates in

Figure 3.

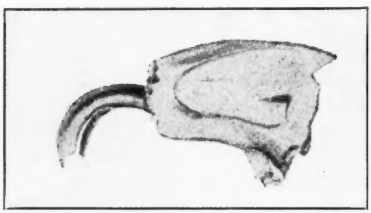


Anterior portion of a rabbit's jaw, seen from the right side for demonstration of the occlusion of the lower incisors with the upper anterior and posterior ones.

the vestibulary pockets, from where then it is gradually pushed between the occlusal surface of the premolars and molars and becomes completely masticated.

The masticatory surfaces of the back tooth of the rabbit have crests and grooves

Figure 4.



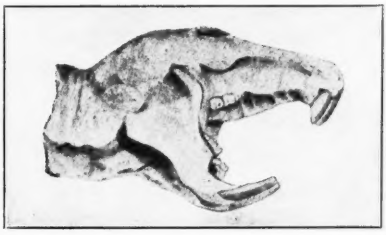
Upper anterior incisor and upper posterior small incisor of a rabbit. The bone tissue around the two teeth has been removed with the purpose of showing the form and length of the two incisors which are moved apart one from the other.

running in the bucco-lingual direction, so that the hinge articulator movement, together with the to and fro movement of the lower jaw supply to the mastica-

tory movements of laterality, which can not be accomplished, because of the absence of the articular mobility between the two halves of the lower jaw bone.

After these considerations upon the masticatory function of Duplicidentata, the question comes naturally how is the mastication of the *Rodents simplicidentati* accomplished. For the purpose of having an explanation I took into consideration the wild rat (*Mus decumanus selvaticus*), which, as it is known, is a rodent and belongs to the family *Muridae,* of the sub-order *Simplicidentata.* Its incisors have the same function of

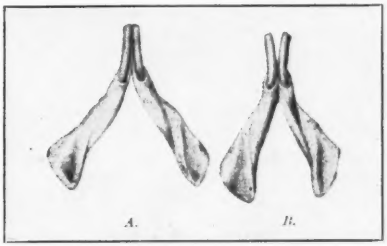
Figure 5.



Skull of a wild rat (**Mus decumanus selvaticus**) seen from its right side.

cutting, tearing, as the canines, which are absent, and of beginning the trituration of the food, as do the incisors of *Duplicidentata,* in which we have noticed the great importance of the function of the small posterior incisors, which are absent in rats and whose presence it appears should be necessary. But observing the profile of the head of the wild rat represented by Figure 5, we soon notice the pronounced inclination of the upper incisors from above below and from the front backward. Observing also the Figure 6, which is a reproduction of the anterior portion of the lower jaw of the rat with the two lower incisors in place, one can see that the two halves of the mandible are articulated and movable one against the other upon their plane of proximal contact, which is below the interdental space of the two incisors (Figure 6 A) and in figure at the right side (Figure 6 B) one

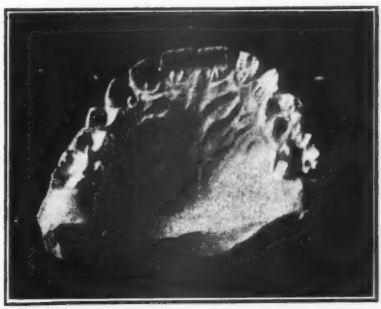
Figure 6.



Anterior portion of the lower jaw of the wild rat seen from the front. A—Appearance of the lower incisors when the lower jaw is in a position of a repose. B—Assumed position of the lower incisors during the lateral masticatory movement.

can see how large can become the divarication of the mesial corner of the cutting edges of the lower incisors, which, while in the figure, taken from a wild rat, are flat and sloping like a chisel in antero-posterior direction, in the white rats the cutting edges are pointed, pricking like pins. I have observed that the

Figure 7.



Set of upper teeth in a subject of 12 years, with **cinguli** upon the lingual surface of the anterior teeth and fifth cusp on the first molars, both well developed.

mobility between the two halves of the lower jaw of the rat is very great, so that experimentally pressing and pushing at the region of the angles of the two halves

of the lower jaw, the proximal corners of the cutting edges of the two lower incisors can be divided laterally and moved alternatively or both at the same time labially to the upper incisors. Each lower incisor, therefore, with its pointed cutting edge can turn round the homologous upper incisor linguo-disto-labially and vice-versa and while gnawing, the rat can accomplish, besides the antero-posterior movements, also movements of laterality with the incisors and back teeth.

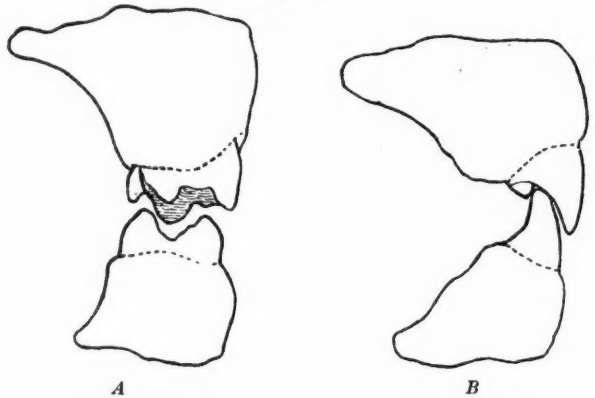
serves as a protective measure of the mucosa.

In man sometimes some or all the anterior upper teeth are provided with *cinguli,* which are more or less developed tuberculi upon the lingual surface near the cervical line,[4] and I believe that the fifth cusp of the first upper molar is analogous to the *cinguli.*

A most splendid example of upper anterior teeth provided with *cinguli* is represented by the photograph in Figure 7.

If one observes in the sagittal cut the

Figure 8.



Schematic sagittal section of the first molars and canines to illustrate the occlusion of the lower teeth with the upper when the latter are provided with the **fifth cusp** (A) and the **cinguli** (B).

The abrasion of the cutting edges of incisors corresponds to this functional dynamic and the inclined direction of the upper incisors supplies the absence of the small posterior incisors of the rabbit.

The protective function of the mucous membrane, which I attribute to the small posterior incisors of the rabbit, is proved by the lesions which I have observed in their region after the healing of the wounds caused by the extraction, when the rabbit was on its normal diet.

In the Simplicidentata, the pronounced inclined direction of the upper incisors

occlusion of the lower teeth in relation with the cinguli (Figure 8 B) one can see that the cutting edge of the lower right canine occludes between the lingual surface of the upper homologous and the lingual surface of the *cingulum.* In the same way, the lower incisors occlude with the upper ones in relation with the *cinguli.*

About the fifth cusp of the first upper molar, clearly is seen in the same figure (8 A) the manner of occlusion of

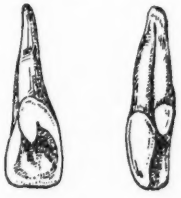
[4]Taylor found that the cinguli existed in 14% of cases upon the lingual surface of the upper central incisors and in 12% of cases upon the upper lateral incisors.

the lingual cusp of the lower molar in the groove existing between the fifth cusp and the lingual surface of the upper molar.

The Figure 9 represents an abnormal lateral incisor which I found on page 65 of Colyer's "Dental Surgery and Pathology." In the right figure the *cingulum* seems a small peg-tooth lying upon the lingual surface of the incisor and it seems to have the same position and relation as the small posterior incisor of the rabbit.

The function of the *cinguli* and of

Figure 9.



Cingulum enormously developed upon an upper lateral incisor (Colyer).

the fifth cusp of the human teeth I believe is analogous to that of the small upper posterior incisors of the rabbit; *it is a masticatory function and protective function of the mucous membrane during mastication.*

I have observed that in the cases of *cinguli* well developed the upper anterior teeth are labially inclined and in these cases if the *cinguli* were absent the mucous membrane would often remain wounded during mastication of hard food, as I have noticed in some cases. The same happens in the cases with the fifth cusp upon the first upper molars. The case represented in Figure 9 could make one think that man in a stage of his evolution has been perhaps a *Duplicidentatus* and a deep study upon this peculiar subject would be very important.

In conclusion I think that I can state:

I. The small upper posterior incisors of the rabbit have a masticatory function and a protective function of the palatal mucous membrane during mastication.

II. They have an analogous function of the *cinguli* and of the *fifth cusp* of the human teeth.

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THE TECHNIC, SURGICAL AND SYSTEMIC RESULTS IN THE PREPARATION OF THE MOUTH FOR DENTURES.

By William A. Colburn, D.D.S., San Francisco, California.

THE preparation of the mouth by means of surgery to produce conditions favorable for artificial dentures may be divided into four separate and distinct steps. First, and probably the easiest part of the operation, the removal of the teeth; second, the eradication of the pathological tissue found adjacent to and beyond the tooth roots; third, the creation of a favorable shape of both upper and lower arches; and fourth, smoothing all high points to a definite general level.

Surgery In Edentulous Mouths.

Unfavorable edentulous mouths are the most difficult cases to handle for several reasons. In the first place, if anything like an approach to an accurate diagnosis is to be attempted, a special set of X-ray pictures that will bring out both the cancellous and soft tissues is imperative. These must be such as will enable the accurate location and differentation of these tissues, and readable at a reasonable distance, while operating. (Unfortunately at the present writing, these are not available at all times.)

Secondly, aside from the readily seen cysts, there may exist fragments of tooth roots, granulomata and sharp fragments of bone. The interpretation of cancellous bone is often very difficult because the pathological involvement may be so extensive as to make differentiation of the various tissues impossible, especially so when radiographs and history of the case previous to the extraction are not available. Assuming this to be true, it is possible that by an operation the case may be converted from a condition of discomfort accompanied by systemic reactions to one that is unfavorable or impossible so far as artificial dentures are concerned even tho systemic disturbances are eliminated.

Another type is one in which the patient is unable to keep the denture, especially the lower, in place for any length of time without discomfort or pain. The radiograph will reveal the bone in the region of the ten front teeth, appearing as a distinct shadow from two to four millimeters above the general line of the maxilla, and, upon dissection of the gums, the bone, in cross section, is seen to resemble a hollow-ground razor both as to shape and sharpness. This condition should be treated surgically, not only on account of the discomfort it causes in wearing the denture, but also because small necrotic areas found here many times give a pure streptococcus culture. Also, from the mechanical standpoint, it is evident that artificial teeth of the proper length can not be placed over the center of the ridge unless this projecting bone be removed. In the troublesome soft ridge cases, painstaking efforts should be made to ascertain all possible causes. The radiograph will generally reveal the condition of the ridge, this is, whether it be thin and sharp or whether pathological conditions exist or not. If the patient is wearing dentures, the articulation should be studied for possible traumatic influences, as the mere incising of a section

of soft tissue does not always cure the condition since the cause is not removed and the symptoms may return.

Removal of the Teeth.

After the gum tissue is laid back out of the way and the retractor placed, the method of removal of the teeth will depend upon the type of case. If dealing with a pyorrhea type and the teeth are quite loose, they may be easily extracted. However, if they are firmly held in the alveoli, and considerable force is necessary in order to dislodge them, it is better to remove enough of the buccal plate with chisel and mallet to avoid the possibility of a large fracture and the breaking of tooth roots, together with unnecessary trauma.

Removal of the Pathological Conditions.

When the X-ray reveals definite pathological areas, the buccal plate over three or four teeth should be dissected away from the mandible or maxilla to as near the apices as possible, and as the teeth are removed, the sockets packed tightly with small pieces of gauze to control the hemorrhage. Then thoroly remove the pathological tissue in the first socket and finish this series before operating on another. Cases presenting necrotic areas where the teeth have been previously extracted should have these areas operated upon before the removal of the adjacent teeth, inasmuch as they act as landmarks to the pathological spaces.

In the typical pyorrhea cases great care should be taken to thoroly dissect the cystic or unorganized material from the periosteum and bone attachments. This is exceedingly difficult on account of the hemorrhage that is always encountered, and which makes a differential diagnosis between normal and pathological tissue difficult during the operation. However, it is very noticeable that when the pathological tissue is removed, the hemorrhage seems to stop or is more easily controlled.

Shaping the Arches Favorable for Dentures.

After all the pathological tissue has been removed, the bone now presents a more or less mutilated and misshapen surface which should be trimmed into a symmetrical arch. The amount of bone that it is necessary to remove can be predetermined by experience, knowledge of denture making, and by observing the shape of the patient's mouth, the amount of gum and teeth exposed in the act of smiling or talking, the prominence of the cuspid eminences and the irregularity of the articulation. However, with a good understanding of the above fundamentals, the operator is many times confronted with the lack of sufficient bone instead of too much, and may have to change his plans during the operation. This condition is explainable by the fact that pathological areas are generally much larger than the X-ray reveals, which conclusively proves that the operation can be postponed a little too long.

Final Smoothing.

Altho the arches now present a definite general outline, they should now be made perfectly smooth if rapid healing and comfort are to be expected. This can be done by the use of a broad file which is set with its cutting edges so placed as to cut when the file is drawn toward the operator instead of the ordinary way. With a properly shaped file of this type, both upper and lower arches can be made smooth in about five minutes without creating any heat or bruising the gums.

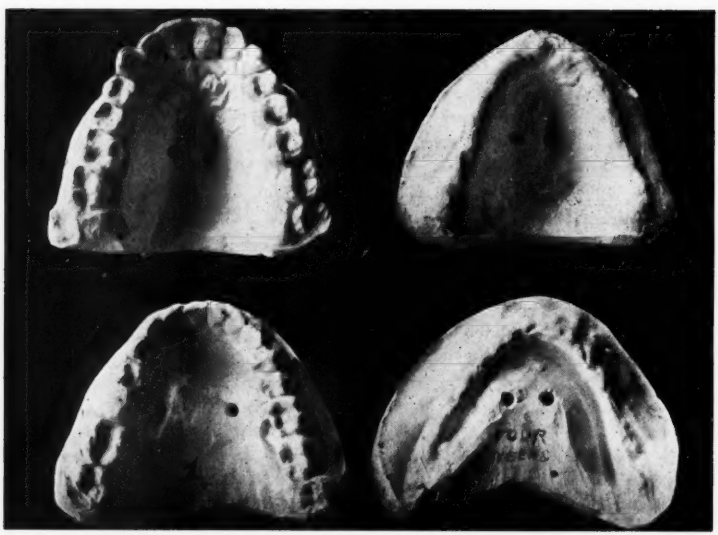
Suturing.

After the bone is properly rounded and smooth, remove the debris, trim the flaps to within about two millimeters of apposition and suture with dermal silk, using the interrupted suture. Careful note should be made at this time of the

Figure 1.

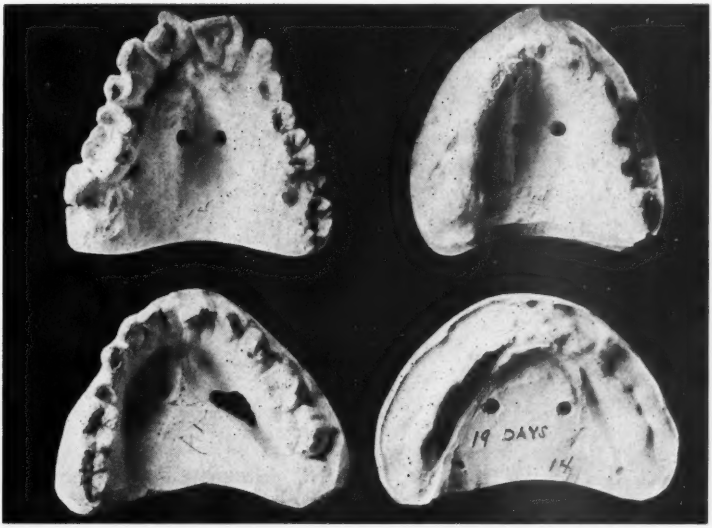
Models of case from four to eight weeks after extraction. No attempt to prepare the mouth for artificial substitutes.

Figure 2.



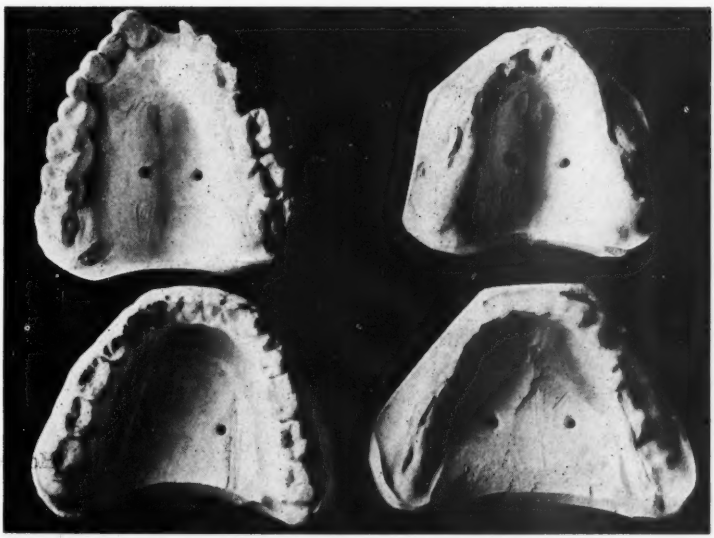
Models of case before and four weeks after the surgical removal of thirty-one teeth. Apical involvement.

Figure 3.



Models of case before and nineteen days after the surgical removal of teeth. Pyorrhea case.

Figure 4.



Models of case before and six weeks after the surgical removal of teeth. Mal-occlusion improved in the artificial substitute.

tendon-like attachments of the soft tissues and muscles which may be festooned between the stitches, thus avoiding placing their attachment too near the crest of the ridge. To be more explicit, it is possible in this work to place the tendon-like attachments of the muscles about where desired for favorable rim height of the intended denture.

Postoperative Treatment.

A mouth wash of hot boric acid solution with witch-hazel or peroxide three or four times a day seems to give excellent results for home treatment. Office treatment generally consists of spraying the mouth thoroly and applying boric acid powder or brilliant green with crystal violet and keeping troublesome spots draining. In toxic cases it is advisable to recommend that the patient return to the physician for a tonic and general systemic treatment. If he has no regular physician recommend a good internal medicine specialist.

Gauze Packing.

Gauze packing is indicated whenever the area after operation is of such size and shape that sufficient collapsible soft tissue can not be made to cover the same with something approaching adaption to the bone. It is also indicated in cases of third molars where the soft tissue may close the wound too rapidly, or when quite large areas of bone are unavoidably left exposed and may be causing excessive postoperative pain. Gauze and bone hemostats are also used in cases of hemorrhage. Plain gauze dipped in oil of cloves, dentone compound tincture of benzoin, etc., are also recommended in this work. However, healing by first intention should be the aim in most cases.

Retracting.

Great care should be exercised in retracting the gum flaps, that the instrument rests on the bone and does not engage the periosteum for it will be bruised or lacerated and poor results will surely follow. Retractors with hooks and sharp teeth are not indicated in this work.

Surgical Results.

With the application of the more recent methods of denture making, thoro surgery absolutely eliminates the necessity for the use of temporary dentures, which is quite an achievement if fundamentals are of any consequence. Instead of the temporary denture, which gives the patient a juggler's job, at the end of three or four weeks the possibility of a practically permanent denture now becomes a reality. This may be built in accordance with the principles of mechanics and esthetics, with assurance that it can be maintained in position with comfort. Teeth of the proper length, width and ridge-lap may be used to restore, and many times to improve the natural arch and articulation. In short, true professional denture service is rendered.

Healing in the average case is obtained in less than three weeks and very little change is noticed, especially in the maxilla, during the following year.

Systemic Results.

The systemic result that we obtain with this technic is also in accord with the excellent results obtained in placing dentures. Not only do the patients improve from the standpoint of getting better nourishment, but also because of the cessation of toxic symptoms, produced by the absorption of bacteria and bacterial toxins from the pathological areas existing in the mandible or maxilla. The following case histories have been selected from a large number of similar ones and are quite characteristic.

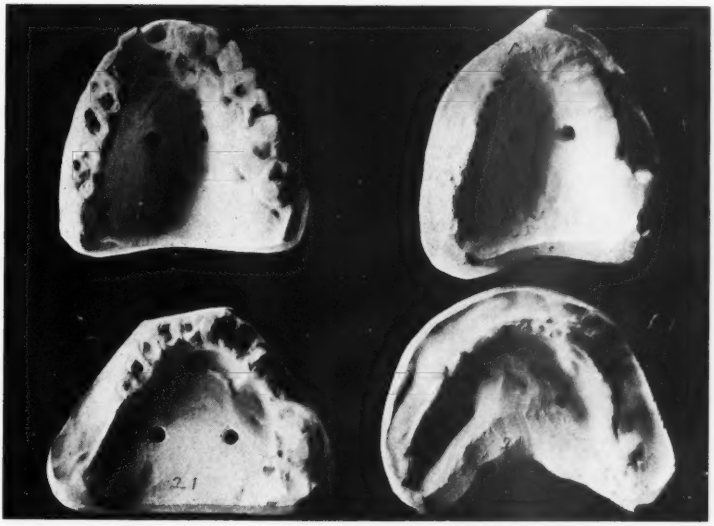
Case Histories.

Mrs. C. A. Age 46. Housewife. May 2, 1919.

Family History—Negative.

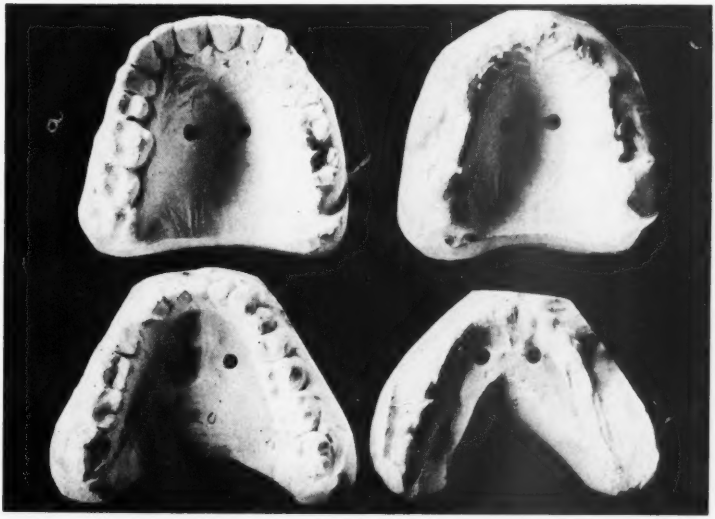
Previous History—Patient had her

Figure 5.



Models of case before and four weeks after the surgical removal of teeth, radical antrum operation and the closing of opening into the mouth from antrum puncture on right side.

Figure 6.



Models of case before and nineteen days after the surgical removal of teeth. Apical involvements.

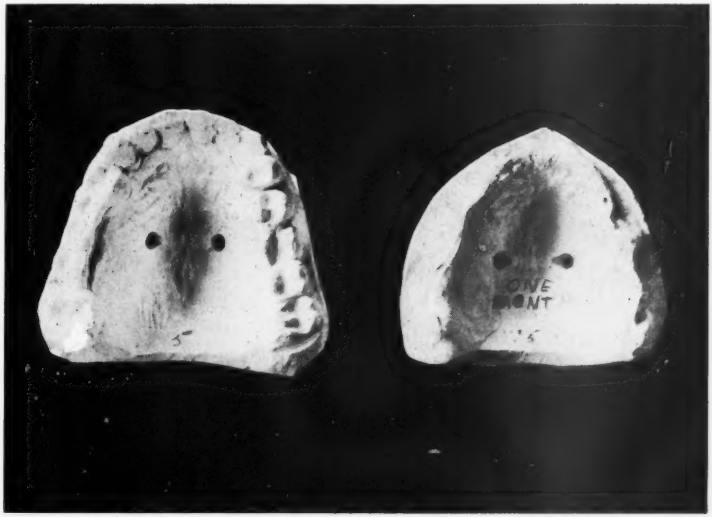
Figure 7.

Model at left shows case after the surgical removal of teeth under local anesthetic. Results unfavorable for dentures both as to shape and remaining pathological tissue. Model at right shows same case after more thorough work under general anesthetic. See physician's report, Miss L. J. K.

Figure 8.

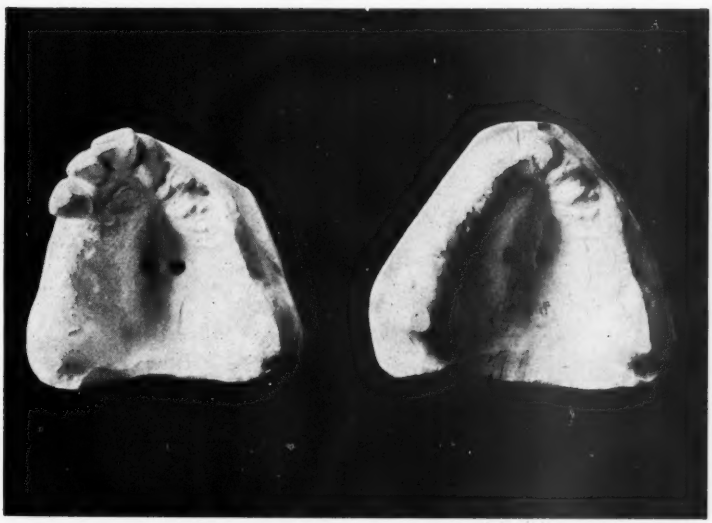
Models of case before and four weeks after the surgical removal of teeth. See physician's report, Mrs. C. A.

Figure 9.



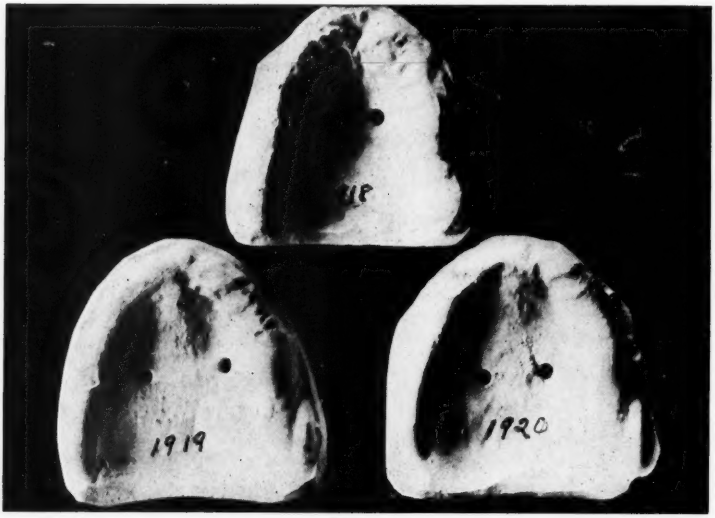
Models of case before and four weeks after the surgical removal of teeth. Apical involvement.

Figure 10.



An easy case under local anesthetic. Entirely healed in fifteen days.

Figure 11.



Upper model shows case a few months after an X-ray diagnosis by Josef Novitzky, of the loss of Haversian bone and the atrophy of marginal ridges resulting from incomplete surgery. Lower models prove the diagnosis to be correct.

Figure 12.

Models of case before and four weeks after the surgical removal of teeth. Natural arch restored in the dentures to within one-half a millimeter of original measurements.

appendix, tubes and some tumors of the uterus removed in 1918.

Present History—Present history dates back to February 1917. At that time she complained of a peculiar pressure in the epigastrium, eruptions of gas, bitter taste in the mouth, pain under the right shoulder blade, feeling as of a lump in the stomach after taking food and drink. She was always tired and had no energy new bridge-work and crowning done, also four extractions. She improved slightly but her nervousness persisted, her tongue still remained coated and her health continued to remain below par even up to September 1918.

The patient at that time consulted me again. She was nervous, was unable to sleep and had marked debility. Blood was taken for a Wasserman which was

Figure 13.

Upper left model shows partial gold denture in position, lower left shows teeth used as supports. Upper right model shows case three weeks after surgical removal.

to perform the ordinary simple duties of the house. Examination at that time showed considerable bridge-work in the mouth. There was pain on deep pressure over the gall bladder, pain intensified by deep respiration. There was pain on pressure over the right kidney. The uterus was retroverted, cervix normal, no tumors, urine normal.

The only pathological thing that could be found was the bad condition of her teeth and she was recommended to see a dentist and have the infected condition of her mouth removed. She had a lot of negative. Under tonics her condition was not improved. Her mouth condition was about the same as previously and she was advised to have something done. The blood pressure was taken, diastolic pressure 90, systolic pressure 170. Patient was depressed and melancholy.

On January 8, 1919, the patient had all the teeth in her mouth extracted. The patient came to me on January 20, 1919. She was in a greatly improved condition. Her spirits were high. She was able to sleep without drugs, her appetite was greatly improved and she was able to do

her housework with ease. On February 13, 1919, her tongue looked much better and she was still continuing to improve. Today the blood pressure is diastolic 90, systolic 140. Her general condition is good and she feels herself in excellent health.

DR. COFORD JOHNSON.

Case No. 4387. Miss L. J. K.

Complaint—Chronic gastritis; acne vulgaris; nervous exhaustion.

For five years before, patient was unable to eat other than a restricted vegetable diet. Could not eat meats, fish or any of the heavier foods, and to attempt fatty foods was to court disaster.

She had a very disagreeable acnieform eruption around the corners of the mouth, and over the chin, and, in spite of working in comparatively sedentary employment, this was increasing in severity.

Various treatments were employed by the various physicians in charge, but with only indifferent success resulting. As a last resort, the teeth and alveolar process were radiographed, and these revealed a very interesting as well as complicated pathological condition.

After due consideration it was decided that the removal would be done under local anesthesia as her chest condition was not of the best for ether risk. All pathologically involved teeth were removed and also those which would interfere with the construction of a plate.

After weeks there was still discharge from the areas which represented the extracted teeth, and in several places the bone was sloughing and coming thru the gums. This being unsatisfactory, the alveoli were re-radiographed and the result was astounding in that the pathological areas which were supposed to have been removed were, with few exceptions, present intact.

It was then decided that the next thing to do would be to put her under a general anesthetic and make a surgically clean operation. She was operated upon last July, and the pathological tissue removed to the satisfaction of both the operator and the physician, the incisions were all sutured and she made a quick and uneventful recovery.

When last seen she had been enjoying a most unlimited diet. The complexion was much clearer, the acne having disappeared, and with great improvement in the nervous condition.

DR. JOSEPH A. POLLIA.

We wish to express our appreciation to the following people for their kind cooperation and assistance in the preparation of this paper:

JOSEF NOVITZKY, D. D. S.
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COFORD JOHNSON, M. D.

REMOVAL OF FOREIGN BODIES FROM MAXILLO-FACIAL AREAS.

By Joseph D. Eby, Major, Dental Corps, United States Army.
Walter Reed U. S. Army General Hospital, Washington, D. C.

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THE removal of foreign bodies, such as bullets, portions of bullets, hand grenade, high explosive and other missile fragments is usually attended by some of the most baffling complications presented in the surgical procedure in the treatment of maxillo-facial injuries.

This work is distinctly divided into two stages:

(A) Immediate removal from fresh wounds.

(B) Removal from healed wounds.

The first operation is much simpler, for the conditions presented to the surgeon afford definite location thru the open tract or other significant points which favor localization and the ready means of direct ingress, ease in grasping the object and its removal. For one to be an expert in this work, however, an absolute mastery of the regional anatomy is essential, thus affording the ability to extract the missile thru some shorter tract opened to it than the path thru which it lodged, as well as to prevent the dangerous liabilities of nerve, vessel and muscle severance and their resultant complications.

The removal of foreign bodies after a wound is healed, places the maximum handicap on the operator far greater than an unhealed case, because of the fact that localization must be gained out of obscurity.

The successful location of foreign bodies usually results from the combined efforts of a careful physical examination of the patient, the detection of its location by sensation or nerve phenomena and by the use of the X-Ray. In the careful physical examination of the region, the point of entrance of the missile is to be taken into account and aided by a statement of the patient, and a very exhaustive study of the regional anatomy will usually result in imparting a reasonably definite idea of location to within perhaps one inch of the exact spot. After having reached a conclusion by this preliminary examination, the patient may be questioned as to any sensations felt from time to time under varying conditions, and if there has been any nerve severance, a test of the field supplied by the nerve in question of both its sensory and motor function will usually reveal some point of evidence as to the location of the offending agent.

By employing the X-Ray, three methods should be pursued:

(A) Location by simple radiographs focused at cross measurements.

(B) Location by stereoscopic radiographs.

(C) *Localization* with the use of fleuroscopy.

Simple location of the presence of the opaque object on the radiographic plate means but very little and those who rely upon same will usually meet with failure as the result of their efforts for the following reasons: Owing to the inability to place the head in a definite position, the plane of the surface of the X-Ray plate, the plane of the angle of the X-Rays cast from the target and the long-axis of the tube cannot be adjusted on such a basis of exactitude as to reflect the object in a constant position and even tho several views may be made, the variance between them cannot be taken as an average for anything definite.

Stereoscopic plates mounted in an accurate stereoscopic apparatus often reveal a very accurate location, but the clinical follow-up of these findings do not always result successfully. Therefore, the final and accurate means of localization usually necessitates resorting to the fleuroscope.

There are two satisfactory methods of procedure in the use of the fleuroscope, which have to be determined largely by the equipment and surroundings and the degree of seriousness of the operation to be performed. If the missile is not of great depth and if a rigid sterile technic is not essential, it is possible to inject the field with a local anesthetic and by locating the object with exploratory needles thrust against it while under the fleuroscope, an incision can then be made and the object dissected out while in view at all times. This method can be followed in the majority of fresh wounds where infection has already been present or expected, and while it is ideal in the sense of the removal of the object, it is contraindicated in healed wounds, because of the fact that the surgical technic under the fleuroscope with the average equipment available, is compromising and thereby causes the liability of unnecessary infection to become serious.

The next most effective plan to pursue is to place the patient beneath the fleuroscope, and by the use of an indelible marker, a spot can be made on the surface immediately over the object with the head placed in an exact anteroposterior position, then by placing the head in an accurate lateral position, another spot can be made with an indelible marker and sufficient other locative points can be determined from the overlying anatomy, and the patient taken to the operating room where proper preparation is waiting. After anesthetizing, an instrument such as a long needle may be thrust in the correct line thru the spots and their point of convergence will usually strike the object, and it can be very readily detected by tactile sensation.

As a rule, *every effort* should be made to extract the missile intra-orally by incising the mucosa and establishing a tract leading to the missile by means of blunt dissection. Infection, while liable, is not dangerous if the proper postoperative treatment is followed, and, that, in the experience at this Station has been effectively handled as follows: After the removal of the missile which is usually grasped with a hemostat, the tract should be packed with a trailer of rubber tissue permitting irrigation for several days with normal saline, thus inducing healing from within-outward. The following cases submitted reveal some interesting points.

Figure 1. Case of 2nd Lt. M. R. B., 24th Ord. Co. Wounded December 18, 1918, Aberdeen, Md. Proving Grounds. Note scar in the glabella where the edge of a high explosive fragment struck, penetrated the left eye, passing squarely between the upper and lower lids, necessitating the enucleation

of the eye. (Prosthetic eye shown in the photograph.)

Figure 2. Antero-posterior radio-

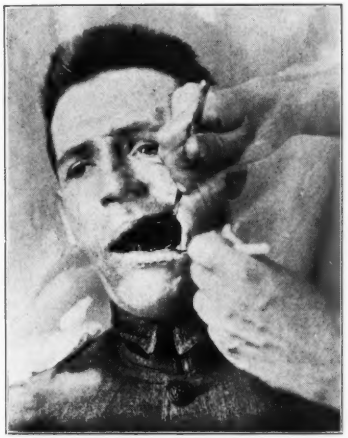


Figure 1.

graph which locates the fragment as tho it were lodged somewhere between the inner surface of the ramus and the Spheno Maxillary Fossa.

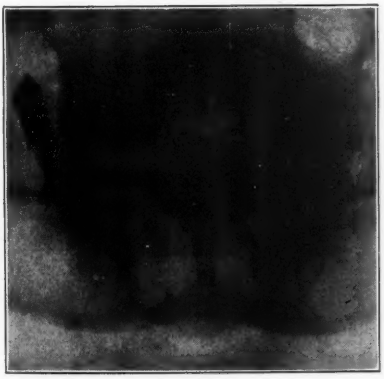


Figure 2.

Figure 3. Radiograph lateral view showing location of fragment as if it were situated near the anterior border of the ramus and probably between it and the tuberosity of the Superior Maxilla. This is a case where these radiographs were accurate enough and the fragment was readily located and re-

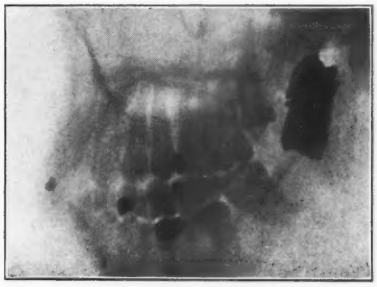


Figure 3.

moved under local anesthetic intra-orally. It was found that this fragment was lodged squarely in the left Internal Pterygoid muscle and the contraction of scar tissue caused trismus, whereby it was impossible for this patient to open his mouth more than 3 Cm. but by the

Figure 4.

adjustment of a trismus apparatus, full motion was readily and permanently restored.

Figure 4. Trismus apparatus show-

ing the employment of springs for mild, constant force.

Figure 5. Case of 2nd Lt. Joseph J.

Figure 5.

S., Co. A, 126th Infantry. Wounded August 1, 1918, 7 A. M., Chateau Thierry. High explosive fragment entered right side of nose, taking a back-

Figure 6.

ward course and to the left, lodged in the face at some point in front of the cranium which gave him unusual nerve disturbances and other complicated sequelae. As in the case of Lt. B., several unsuccessful efforts were made to remove fragment and the wound

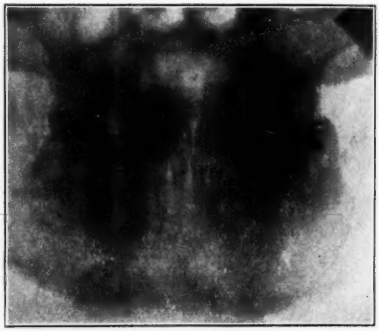


Figure 7.

finally healed. This illustration shows the point of entrance of the missile.

Figure 6. Radiograph lateral view showing the fragment is located somewhere in the region of the coronoid pro-

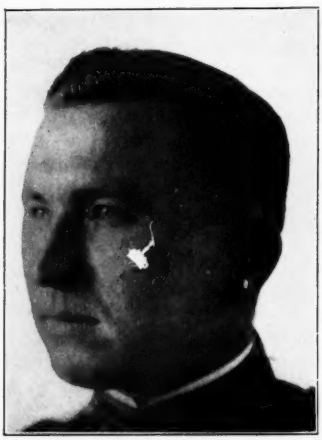


Figure 8.

cess and zygoma or at some point deeper but undetermined.

Figure 7. Radiograph antero-posterior view. This was one of several

views taken in this position and revealed fragment located apparently inside the ramus and somewhere beneath the Malar process and arch of zygoma. It was determined to explore with no further effort at localization, and after two very extensive attempts, failure resulted.

The next step to pursue was to procure stereoscopic plates, but this test did not reveal any more convincing information as to the exact localization of the fragment than the simple radiographs.

Patient was then injected with local anesthetic and placed beneath the fleuroscope, and the indelible spots were marked on left cheek as shown in Figure 8.

Figure 8. Photograph left side of face showing localization with the indelible spots. Patient was taken to the operating room and upon piercing these spots the fragment was found by the needle thrust thru the Parotid region and was located immediately posterior to and behind the Greater Wing of the Sphenoid bone and at a point of about 8 Cm. from its apparent location in the radiographs.

Fragment was removed intra-orally, wound drained and irrigated, healing promptly.

Figures 9 and 10. Case of 1st Sgt. John E. E., Co. A, 12th M. G. Battalion. Wounded Oct. 5, 1918, Argonne Forest. High explosive fragment, missile entered right ear taking a transverse course, passed beneath the zygoma, fractured the head of the condyle, entered the Superior Maxillary bone thru the right tuberosity, passed across the posterior superior border of the Palatal processes, and lodged in the left side of face. This photograph illustrates the total paralysis of the right side of face due to the severance of the 7th cranial nerve.

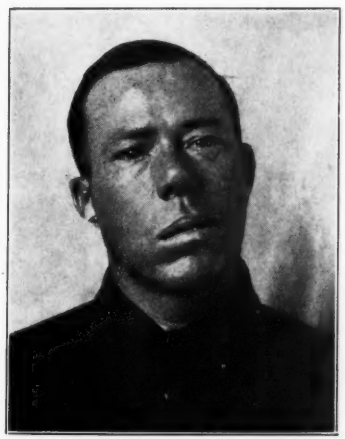


Figure 9.

Figure 10.

Figure 11. Radiograph antero-posterior view showing fragment located somewhere in the path of an imaginary

line drawn thru the left superior maxillary sinus.

Figure 12. Radiograph lateral view showing fragment somewhere in region near posterior superior border of palate and the left tuberosity. This was a case

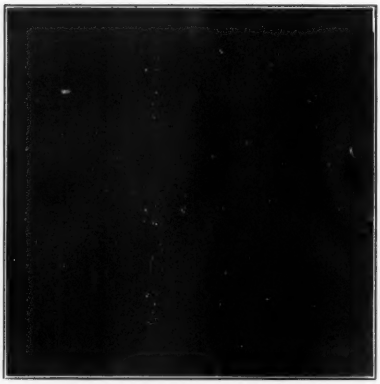


Figure 11.

in which the stereoscopic plates revealed so unquestionably the fact that this missile was resting one-half in the left maxillary sinus and one-half projecting thru the tuberosity in the Spheno-Maxillary fissure, that fleuroscopic localization was not considered necessary. Patient was injected with conductive anesthesia, and the left upper third molar extracted. A surgical bur attached to a contra-angular handpiece was placed into the socket and immediately struck the fragment which, after chiseling away sufficient overlying bone, was easily removed. The left maxillary sinus had presented

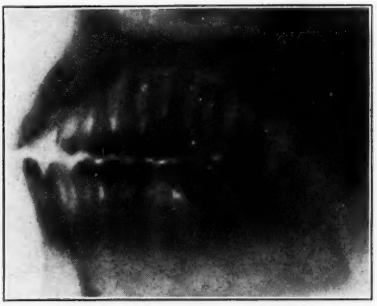


Figure 12.

no symptoms of infection; it was properly packed, irrigated and healed readily.

These three cases illustrating localization by simple radiographs, stereoscopic radiographs and fleuroscopy are fair illustrations of the methods and efforts necessary in the difficult work of the removal of foreign bodies from the intricate anatomy of the face.

THE TREATMENT OF PULPLESS TEETH.

By Percy R. Howe, A.B., D.D.S., Boston, Mass.
Assistant Professor of Dental Research Harvard University.
Chief of Research Laboratory The Forsyth Dental Infirmary for Children.

PART III. PULPLESS TEETH.*

(Read before the Chicago Dental Society February 17, 1920.)

OUR ideas upon the treatment of pulpless teeth are in a most chaotic condition. Some insist upon as elaborate procedures for proper canal work as are necessary for major abdominal operations. Others simply give it up. They declare that pulpless roots cannot be successfully treated. They clamor for the extraction of every pulpless tooth. It certainly seems as if it is a simple matter to successfully treat a pulpless tooth root if one understands anything about the structures that we have to deal with. Many thousands of such teeth have been treated by our profession, and the teeth have proved to be of service and comfort to the patients. Thousands, too, of these patients have lived out their full quota of years. This matter of infection I have discussed in other parts of this paper. We have in our root-canal work to so treat the organic part of the tooth substance that it is as free as possible from decomposing material and to protect the remaining tissue against further decomposition. I shall again recommend a simple way to do this. It is the organic substance of the tooth that concerns us in root-canal work. How large a part of the tooth is organic may be seen by decalcifying teeth. The form is still retained. On the other hand, if we destroy the organic matter, the tooth crumbles to pieces. The tubuli themselves form a large part of the organic matrix of the tooth. They do not run in an exact mathematical plane. If we examine a ground section we see in one part cross sections of the tubuli; at another point we follow along the length of the tubuli. They have many branches and anastomose. In the apical third of the root, as pointed out by Dr. Box, in certain instances at least they may be seen to connect with the processes of the lacunae of the cementum, so that a pulpless tooth does not stand aloof from the rest of the body, but an organic connection still exists between the tooth substance and its adjacent tissues. The accompanying photographs give an idea of the structure of the tooth substance that we are called upon to treat in root-canal work.

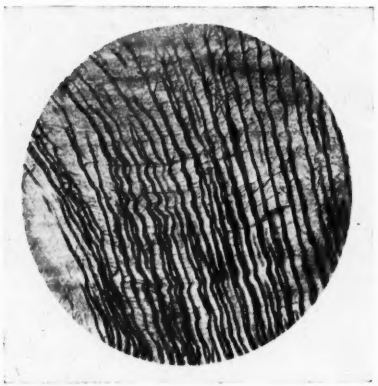
Now when the pulp dies, if the process is slow the structure of the tooth itself is changed. The tubuli gradually disappear in certain areas, and a hyaline condition takes place. These disintegrating tubuli need to be treated. The accompanying cuts, which have been previously used in other articles, show this. In our usual conception of root treatment we have given this no atten-

*Parts I and II published in Vol. VII, Nos. 6 and 7.

tion. The tooth substance itself needs treatment. It is undergoing a degenerate change and contains infection. The canal alone has been the objective aimed at in our usual work.

Again, in studying the form of pulp canals it is evident that there are many points of inlet or outlet in canals in the apical region. This cannot always be shown by grinding the teeth. To show this I have treated teeth with silver as I shall describe further on, decalcified the teeth in hydrochloric acid, cleared them up in acetic acid, and still further in xylol, and mounted them in Kaiser's Jelly. This renders them transparent, and shows how often many bifurcations occur near the end of the root. It also shows that many branchings and anastomoses occur in the canal. Often the canal does not have its main opening at the apex, but at one side, and the outlet is thru many branches, some of them very fine indeed. Some roots that we should expect to have one canal have two, with anastomoses and branchings thruout its length. Often in a straight root the canal turns at a right angle near the apex opening laterally. A close examination of the cuts shows all these things and more, better than a written description. It is evident that it is impossible to clean out all the organic material in pulp canals in many cases. The accessible gross material may be removed. No attempts have been made to clear out the tubili themselves, yet they are affected. In spite of these discrepancies a large percentage of root treatment has been successful and for many years. Some might argue about the term successful, but the teeth have been rendered comfortable and serviceable, with no clinical evidence of disturbance, no redness of the gums, no soreness, no response to thermal changes, no heat in the surrounding tissue, no pain. The teeth are firm, the tissue sound, and they are of great use to the individual. Withal they are much more cleanly than any extensive artificial substitute. One thing that these sections and the work of many others demonstrates is that the endeavor to bore out and fill the apical end of a tooth by usual methods have often resulted in

Figure 1.



Ground section of dentin showing tubuli and their branching; note also anastamosis. Stained with carbol fuchsin. Magnification—670 diameters.

Figure 2.

Ground section of dentin showing tubuli and their branching stained with 5% silver nitrate solution. Magnification—670 diameters.

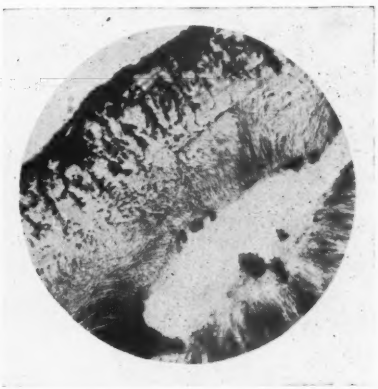
making artificial openings and in creating an unnatural condition in this region. Much affected inaccessible organic material remains. It is reported by one radiographist that after the examination of very many teeth conspicuous areas are to be found fully as much about teeth "perfectly" filled to the end as are found about teeth not filled to the end. In conferring with some of our English confreres, they have stated that branchings in this region, it seems evident that nothing but traumatic injury can be the result. We are predisposing such tissue to further disintegration and infection.

These are a few of the reasons why I shall repeat some recommendations for treating canals that I have previously described under the head of metallic silver reduction. By this method all the various diseased canals are sterilized and

Figure 3.

A, B, C.—Branching tubuli of dentin connecting with lacunae of cementum. Ground section, stained with carbol fuchsin. Magnification—370 diameters.

Figure 4.



Ground section of dentin near tip of root; to show tubuli of dentin connecting with lacunae of cementum. Stained with carbol fuchsin. Magnification—80 diameters.

some of their practitioners who have not filled roots at all, but who have "treated" the canal contents, have shown better results clinically, and by X-ray examination, than those who have attempted the usual methods of procedure. I am not advocating leaving roots unfilled, but I am endeavoring to show that our present work in the apical region is not always conducive of the best results. I never could see any object in forcing foreign material thru root ends. When we consider the delicate arrangement of the tissues about this part of the root, and further, when we examine root ends and note the many bifurcates and blocked by the finely divided metallic silver, no matter how fine they may be. The diseased tubuli are also sterilized and filled. The material is selective in action. It will not enter sound tissue because this contains a coagulable material. This method has had a very extensive trial, and the results in the hands of those who understand the principles upon which it acts have fully sustained its expectations. Out of 450 cases that we have recorded, only three extractions were necessary.

Preparation of Material. Two solutions are necessary, one containing silver in such a form that it may be quickly

and fully thrown down, the other containing the agent that throws it down. The first solution consists of a solution of silver oxide in ammonia. The other solution or the reducing agent may be a number of organic materials. Eugenol is one of these, and a very good reducing agent. This leaves a rather thick sediment, is slow in action, and does not have great penetrating ability. I prefer formalin, for formaldehyde is very penetrating, and it also produces a high degree of sterility. The great sterilizing power of this method of treatment is not due either to the silver solution alone nor to the formaldehyde, but to the reaction between the two. Its effect is immediate. The first solution is prepared by just covering silver nitrate crystals with water, and dissolving them by the aid of heat. When dissolved, add strong ammonia. This throws down a black precipitate of silver oxide. Continue adding ammonia until the liquid almost clears. Do not allow it to quite clear up, because we wish to have no excess of ammonia. Then allow it to cool and settle. Pour off the top clear fluid and preserve it in dark glass bottles for use. The other solution is simply a twenty per cent solution of formalin, that is, one-quarter formalin and three-quarters water, making about a ten per cent solution of formaldehyde. This solution is kept in another bottle.

The formula that I have given for these two solutions is as follows:

Solution A.—3 Grms. Silver Nitrate Crystals; 1 cc. Distilled Water; 2.5 cc. 28% Ammonia.

Dissolve Silver Nitrate in the water with heat. Add ammonia and filter. Keep in dark glass bottles.

Solution B.—1 part Formalin (40% solution of Formaldehyde), 3 parts water.

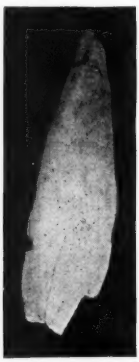
Other solutions needed are:

A varnish consisting of rosin and alcohol, of a fairly thick consistency.

Stain remover, a strong solution of freshly prepared iodide of potassium followed by alcohol or ammonia.

A cleaner for bottles and glassware,—a saturated solution of bichromate of potassium in strong sulphuric acid. The containing bottles should first be filled with this solution and it allowed to remain over night. The solution should

Figure 5.



Section of sound dentin.

Figure 6.

Section of tooth showing structural alteration due to disease of pulp and pericementum.

then be emptied back into the stock solution and the bottles washed thoroly, preferably with distilled water. This is a common laboratory cleaning solution for chemical work. It is also an excellent idea to clean all bottles in this way that are intended to hold our medicaments.

Instruments for Application.

Dr. Hamilton, of Boston, has designed some that are very convenient. One consists of curved glass tubing. Attached to one end is a small piece of rubber tubing. Into the other end of the tubing is placed a glass rod. By squeezing the tubing a quantity of the solution may be taken up. When the pressure on the tubing is released a neat drop of the solution is discharged. Two of these are necessary, one for each solution.

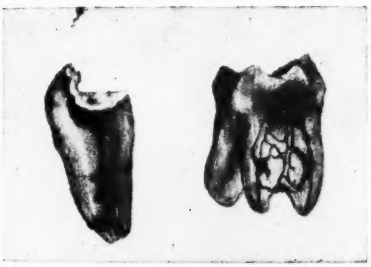
Another instrument that Dr. Hamilton has devised is a small loop of a wire which is inserted in a handle. This, too, is convenient for handling the solutions. He has also suggested using something like a drawing pen. The operators in the Forsyth Infirmary are adept at picking up the solution in their pliers held slightly open. Other ideas will occur to various operators.

Smooth square-sided applicators, similar to Swiss watch broaches, are good. A swab of cotton nicely rolled about one of these makes a good instrument to varnish the tooth with. It is also suitable to remove air-lock and assist in an accurate placing of the solutions in the tooth. Cotton points are also very useful in the application of these solutions.

Principles of Its Use.

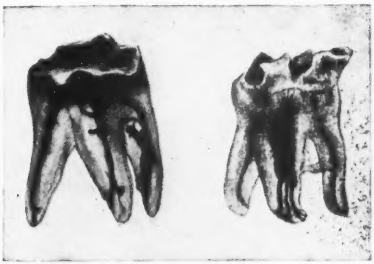
It is necessary for the operator to dismiss from his mind all mechanical ideas. The futility of these is to be seen from the cuts. We are to rely on chemical and physical principles. This material is intended for use within the tooth. We are trying to reach the minute anatomy of the tooth, ramifications and all diseased organic matter.

Figure 7.



Drawings of specimens treated with silver and rendered transparent. Shows formation of root-canal.

Figure 8.



Drawings of specimens treated with silver and rendered transparent. Shows formation of root-canal.

The principles of capillarity are relied upon. No broach should ever be placed more than one-third the way up a canal. The material will flow up a canal if air lock is removed and enough of the solution used. See cuts.

There should be no pain whatever.—The pain is due wholly to the operator's procedure. He has passed the material thru the apical region.

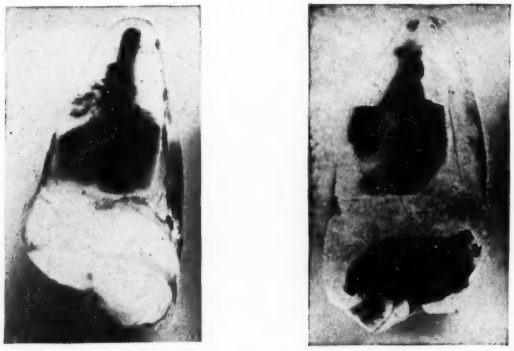
Method of Procedure.

A. In case of a putrescent pulp, apply rubber-dam. Prepare a strong edge to cavity. Clean out bulk of debris. Dry and apply varnish, covering entire

tooth and painting the inside of the tooth walls down to pulp chamber. Dry on varnish. Fill the tooth cavity full of the silver solution. Allow it to remain for about three minutes. If it is taken up by the tooth apply more. The object is to saturate the diseased tooth structure and pulp with it. Then add to this the formalin solution and mix it a little in the cavity, allowing it to remain a minute or more. Absorb the solution out with cotton or absorbent paper. Repeat with another similar application. This of potash to remove the possibility of stain from any remaining silver solution. Take off varnish with alcohol.

B. In a case with one putrescent canal and one with sensation proceed as in *A*, but work the material with a broach into the canal that is vital. This may cause momentary discomfort, but it is slight, and in a very few moments ends. In both cases all organic matter is not removed. In no canal is all organic matter ever removed. But remove as much as you can. By this treatment

Figure 9.



Teeth treated in head with silver, then extracted; note permeation with silver, of diseased areas of pulp and dentin.

is to furnish more metallic silver. The region reached is sterile. Absorb again, and reapply solutions, allowing them to enter root-canals. It is unnecessary to go thru an elaborate procedure to obtain sterility. The sterilizing agents are in the field of operation. The putrescent pulp becomes sterile in a few moments and the instruments working in this material are sterilized by it. Dry and remove bulk of putrescent material. Reapply the solutions. Allow them to remain about three minutes, dry out and put in eugenol, drying this in. The tooth is sterile and blocked by finely divided silver in a most perfect manner. Fill with anything you like.

Finally apply the solution of iodide any remaining becomes a stiff dry mass of sterile albuminate of silver.

C. In case of an abscess, treat as in *A* once, so as to remove the original cause of the trouble, syringe thru the abscess or into it with Dakin's Solution, as often as possible. If there is no opening into abscess make one either thru root or gum and wash out with Dakin's Solution. Dakin's Solution, Physiological Salt or Drainage is the proper treatment for the cellular tissues. The silver is for the dentin and tooth proper. As soon as abscess heals, apply the silver as in *A* several times, and fill.

D. For nerve capping, do not remove the decalcified material over the pulp. Each dentinal capping has been individ-

ually laid down by its odontoblasts. Cover the floor of cavity with a cement of zinc oxide and eugenol, in back teeth mix a few crushed crystals of silver nitrate into the zinc oxide and eugenol. This aids in hardening the cement. After hardening a little apply silver treatment. All the affected dentin is thus sterilized and filled, even when the affection is microscopically fine. Pulps are very vascular. They, therefore, have great recuperative power both as to disposition of infection and as to tissue repair.

E. Treat all dentin and caries with this material. It will seek out unsuspected areas that are affected, sterilizing and blocking them. It will not enter sound structure. No cavity is sterile after excavation by the bur. Excavate as little as possible consistent with filling retention and sterilize. This saves mechanical destruction of the tooth with the eventual pulp death and still subsequent need for canal work.

It is frequently asked if this metallic silver shows in X-ray work. It does, but only in part. An X-ray photograph is too diffused to show it in every part. In my opinion the X-ray is too much relied upon for the interpretation as to what is correct and what is not in our work. Neither infection nor pus can be told by the X-ray, light and darkness only are distinguished. A darkened area no larger than a grain of rice does not mean an abscess. These are usually thickened cicatrical tissue. It is Nature's repair work that has followed the disturbance created by our efforts at treatment. Larger areas which show signs of swelling or crepitation should, of course, be opened and cleared up. The appearance following this treatment is a close filling in of tissue about these roots. The treatment which we have described is simplicity itself. It is scientific, and I believe the most perfect yet developed. The discoloration is a disadvantage. Pain there never should be, and is wholly due to a faulty method of handling the material. Grasp the principles of application and the rest is very simple.

PRESIDENT'S ADDRESS BEFORE THE NATIONAL DENTAL ASSOCIATION.

By John V. Conzett, D. Sc., D. D. S., Dubuque, Iowa.

(Read before the National Dental Association at Its Twenty-fourth Annual Session, Boston, Mass., August 23-27, 1920.)

IF THERE is anything that I am proud of this day it is that I am a dentist and that I am a member of the National Dental Association, for no profession has made greater progress in the last decade than has the beloved one to which we owe allegiance. Still in its infancy, it has so rapidly advanced that now it takes equal rank with the learned professions of the world, and with its own degree, its individual literature, and specialized colleges. It is ministering to the needs of humanity in a manner that has won the plaudit of the world, and has given her the rightful rank of equality with the other branches of the healing art. All of this should, and does, make us proud and grateful, but with the pride and gratitude which these blessings engender comes the realization of the tremendous responsibility that accrues to us, by reason of this very recognition.

As an organization, we feel that the place accorded to the profession in general has very largely been due to the efforts made possible by the association of the earnest men composing this organization, banded together with one accord for the advancement of the profession in learning, professional efficiency, and the service it may render to humanity. Today the National Dental Association numbers over 25,000 members, and daily are we adding to this number, until we hope that the day is not far distant when every ethical dentist in the country will be a member and actively engaged in its welfare, and thru it to the good of humanity, whose servant we are.

Much has been given to us and much will be required in consequence. It, therefore, behooves us to take stock of our opportunities, our possibilities, and our ability to measure up to the standard which the position demands.

The Problem of Focal Infection.

The recent trend in medical thought which has placed a tremendous burden of responsibility upon the members of the Dental Profession must be recognized, and met in the spirit of an honest effort to serve humanity in the most helpful manner. No matter how the problem may have come, nor what stigma it may seem to have placed upon some of our efforts of the past we must meet the issue in the spirit of scientific investigation. Not in a reckless stampede to extract all of the teeth that come to us in a diseased condition, for to do this would be to confess our inability to cope with the situation, and would set the profession back one hundred years. This problem as well as every other one that will present in the future, must be met in the spirit of conservation, in which the health of the individual and

his general welfare must be the first consideration, and the financial returns to the dentist should be of secondary importance. It is difficult to disassociate the financial advancement of the individual from the thought of the problem in hand, but when this phase of the problem obtrudes itself into a scientific consideration of any subject, it is impossible to arrive at a perfect solution of the problem. For this reason it is very difficult for the individual dentist to solve many of the problems that daily arise in the practice of his profession, but, fortunately by reason of our banding together for the purpose of mutual helpfulness we have been able to thrust these difficult problems away from our offices and immediate environment and place them in the hands of men that have been specially trained in the various departments of scientific endeavor, and bid them attack them for us.

In this way the various vexing problems of our professional life can and are being solved away from the entanglements of financial conditions. For in this way alone can we be fair to the problem, to our patients, and to the profession.

The Research Commission.

By reason of our great ability as an Association we can do as an organization that which we could not possibly do as individuals. Therefore, in the creation of the Research Commission of the National Dental Association, we have taken a forward step that will mean more for the dental profession and thru it to humanity, than anything that we have ever been able to do.

It must be remembered that scientific investigation is not the work of a day, and research is not to be measured by its immediate results. Some of the most far-reaching results are obtained by years of earnest work that for a long time seemed to be bearing no fruit, so if the results do not seem to be commensurate with expectations, always remember that the gold in richest abundance may lie just beyond the next pickful of earth, and the abandoning of a problem because of the apparent paucity of the lead is unwise and often fatal to the enterprise. I am not making any excuses for our splendid research workers, for they have accomplished wonders in their various fields. I am simply attempting to stimulate some faint hearts that have become critical because of the-to-them poverty of results that have been attained. By reason of the work of our research men, we have attained a position in the minds of scientific men that we would never have reached in any other way, and it is our duty and should be our pleasure, to support them in every possible manner. I, therefore, bespeak for the Research Commission in its various activities, the earnest support and cooperation of every member of the Association.

The Research Institute of the National Dental Association has resolved to discontinue its activities and dispose of its properties and turn the proceeds over to the Research Commission for the prosecution of their work. The institute has not been a failure by any means, and its assets, which will be the property of the National Dental Association from this time, have more than doubled. The purchase of the building at Cleveland was a good piece of business for the property, which was bought at a price of $52,000.00, is now worth $112,000.00.

The hope is expressed that similar institutions will be inaugurated in various sections of the country to attempt to carry on the work that the institute was designed to do, and it is my earnest hope that such may be the case, and not allow the apparent failure of the Research Institute to forever bar any repetition of

activities along the same line. I am glad to see the institute liquidate its assets and pass them on to the authorities of the Nation l Dental Association, for there is where they belong, and the fact that the funds are now an inviolable part of the association will still the criticism that has made the work of the officers of the institute so hard. Too much commendation cannot be given to Dr. Weston A. Price, for his zeal in the organization and financing of the institute, and the splendid endowment which is now, (or will be when the business is fully closed) the property of the National Dental Association perpetually dedicated to the cause of dental research, is almost entirely due to his enthusiasm, zeal and ability.

THE NATIONAL DENTAL JOURNAL.

It is not possible for any profession to exist or to make any material advancement without an exchange of professional thought thru the mediumship of some means of adequate publicity. We are very fortunate in having such a mediumship in our splendid National Dental Journal. I am confident that much of the progress that the profession has made in the past few years has been largely due to the influence of this splendid publication. The publication committee should have the gratitude of every member of the association, and particularly is this due to the Editor, Dr. Otto U. King. The splendid success of The Journal has largely been due to the brilliant talents and untiring efforts of our Editor-in-chief, Dr. King, and the appreciation of the entire association should be extended to him.

The Journal in a few short years has been placed upon a fairly sound financial basis.

Starting as a quarterly with no funds, in seven years it has grown into a monthly and gives promise of developing into something still larger and more brilliant in the not distant future. It now boasts of a property, the financial value of which is not less than $100,000.00 with a surplus of $40,000.00. This good work should continue until there is a surplus fund of at least $500,000.00 to place The Journal on a basis which will insure it against any exigency that might arise. It is a remarkable achievement worthy of our highest commendation, that our Journal has been launched and in so short a time has made a place for itself that establishes it on a parity with the Journals of the senior organization of the healing art. We are indeed proud of our Journal, of the publication committee and the Editor.

THE DENTAL EDUCATIONAL COUNCIL OF AMERICA.

The education of the future dentist has been delegated to the colleges of the country and nobly have they fulfilled their mission. Their task has not been an easy one for the rapid advancement of the profession in scientific thought and professional attainment, has placed an ever-changing condition upon the colleges and their teaching equipment, that has meant no small burden to them. In spite of this they have, for the most part, valiently carried on their work and we owe much of our present position to their untiring efforts and zealous endeavors. However, the educational conditions of our various institutions was in a very chaotic condition some few years back owing to the difference of educational ideals, and opportunities present in the different colleges. So apparent was this to the examining bodies that they suggested the organization of an advisory body composed of five members from each of the National Dental Organizations. Therefore, the Dental Educational Council of America was formed with a membership of five from the National Examiners' Association, five from

the National Faculties Association, and five from the National Dental Association. The work of this body has been productive of the greatest good, and out of the chaotic conditions of the past has been evolved an educational system that is a unit in regard to the preliminary entrance requirements, the curriculum and the management of the institutions in regard to commercialism.

Several colleges that were not living up to the ideals of the profession have been stimulated to better efforts and are rapidly approaching the highest attainment in educational ideals. The greatest good that the council might have attained has been made impossible by the refusal of one branch of the colleges to affiliate with the Educational Council, but in spite of that drawback, the work has progressed in such a manner that it has received the approbation of the United States Government, and during the period of the war was made the official medium of the government's activities in dental education. The future progress of education in the dental profession depends upon a central body which shall have the authority to advise, stimulate, and correct the educational activities of the various institutions. I know of no better medium for this work than the one now functionating, representing, as it does, the three great bodies in dental education, legislation, and execution. I, therefore, bespeak for the Dental Educational Council of America the moral and financial support of the National Dental Association.

This Year's Convention.

The dental profession has been accorded the approval of the United States Government, and in all federal activities has been placed upon a parity with the medical profession. This is a proud position, and one that we have labored long and arduously to attain, but no act of government or legislature can maintain a parity between any professions. If we are to maintain an equality in professional and scholastic attainments, which is the true criterion of worth, it must be because of the individual character of the members composing the profession. If we are to be recognized as a learned profession, if we are to be able to successfully cope with the tremendous health problems that have been placed upon our shoulders, it will be because we have cultivated ourselves along all scholastic lines until we are able to maintain our position in any society and under any conditions. Our schools and colleges are doing splendid work, our Educational Council is demanding a broader and deeper culture, and our examining bodies are becoming more exacting in their demands upon the graduates of the colleges before permitting them to practice their profession, and all of these activities are making for a larger and better culture, and it remains for us, the members of the profession that are now in active practice, to lift up the body of the profession to a higher scholastic and professional level. In order to stimulate such progress in the profession, we have organized our various state societies, and they have accomplished a great work, but there are still greater possibilities beyond, and it is the desire of your officers to still further stimulate the profession to greater and higher endeavors. In accordance with this thought we have instituted a plan of operation in the convention this year that will be of greater educational value than the manner in which conventions have been conducted in the past. As you have seen, the program has alloted to each section the entire time of the convention, so that each section will function thru the entire convention, thus making it possible for the man that is earnest in his desire to receive some training in some special

branch, to devote himself to that section thruout the entire session, and thereby obtain the greatest possible amount in the shortest time. At the same time, we have made it possible for a man to see any of the sections if that is his desire. It is not made manatory for him to take any one section. In this way we hope to overcome the criticism that has so often been expressed that there was so much to see that a man got nothing. If a man desires any one thing, it will be here for him to obtain and if it is not his desire to get it he may go from section to section as in the past, and get what he can.

The Study Clubs.

In the rapid progress of the profession in the past few years, it has been difficult for the average man to keep up with the attainments of the profession, and the practitioner has felt himself slipping, feeling that the young man just out of college had things that he was not able to obtain. In view of this sentiment in the profession and attempting to minister to it, numerous study clubs have been organized for the purpose of teaching advanced methods and stimulating study along the various problems that present from time to time. This movement has been most laudable and has been productive of much good, but with the good, some evil has crept in and the greatest good has not been accomplished. The study club method is chaotic in that it is individual and without any central advice or control. If the club happens to be in the hands of some competent man, capable of delivering the goods, well and good, but, as it frequently happens, if the club falls into the hands of some man that is simply trying to exploit himself or some product in which he is interested either as inventor or salesman, the result may be far from the best. At best, the present method is far from obtaining the maximum benefit that might accrue from an organized effort of the profession along the line of extension work. That the work is needed goes without saying, and therefore, it is the pleasure of your present chairman to offer a suggestion for your consideration which he thinks will be productive of the greatest good along the line of extension work.

I would advise that an extension course committee be appointed by the National Dental Association whose duty will be the formulation of the courses of study for the various activities of the profession. That syllabi be formulated for each activity and that these syllabi be given to any club that might wish to pursue that particular course of study. In this way, if a club decided to study the filling of teeth with gold, for instance, or the treatment of root-canals, or conductive anesthesia, they could write to the central extension course committee and obtain the course that they desired and in the pursuance of the same, know that they were in line with the highest authority on the subject, and that the work done under the direction of this committee would receive the proper recognition. I would further advise that this committee have supervision over the men that were giving these courses so that their work might be authorative. As far as possible, it would be advisable that the men teaching extension courses should be men in active college work, for the reason that this will work in harmony with a further suggestion that I would like to make, that will be in line with the extension work as it has been hurriedly outlined here, and that is, that all of the colleges put in post-graduate courses that will be in harmony with the extension courses as outlined by the extension course committee. In this way the work of extension will stimulate the man in active practice to take up some subject in which he is interested or in which he feels himself

to be deficient, and while the extension club will give him much, it will also stimulate him to greater endeavors and will drive him in large numbers to the colleges in order to take advantage of the post-graduate courses that they will put on. It would be my thought that the men in the extension clubs would be given credit for the work that they have done in the clubs when presenting for post-graduate work, and for this reason would advise that the extension work be placed in the hands of college men, that the work of the clubs and the colleges might be properly co-ordinated.

The central committee should be large enough to allow one man from each specialty of the profession with power to call to his aid such other men as in his judgment were necessary to the proper fulfilling of his duties in the premises. I would advise a committee of ten men, one from each of the sections, Operative Dentistry, Materia Medica and Therapeutics, Prosthetic Dentistry, Crown and Bridge-Work, Oral Surgery including Anesthesia, Orthodontia, Periodontia, Oral Hygiene, Root-Canal Technic, and Scientific Subjects. These men to be the chairman of the various departments and responsible for them, but able to call to their assistance such talent as, in their judgment, seemed to be necessary. In the ultimate working out of this system it might be advisable to confer some degree or certificate of commendation upon the practitioner that completed the courses, but that is a detail than can be worked out by the committee having the matter in charge and is not incorporated in my advice upon the subject.

Oral Hygiene.

The matter of the education of the public in regard to the necessity of a clean mouth and teeth should be emphasized in this day as never before, for with all of the knowledge that we now possess concerning the disastrous consequences attendant upon diseased conditions of the oral cavity, the necessity for Oral Hygiene and Prophylaxis is magnified beyond any of our previous conceptions. We would advise a more emphatic campaign in public instruction by the Oral Hygiene Committee and would advise the passage of such legislation by the association that would stimulate the interest of the profession and thru them the general public, in this important subject. The funds necessary for the prosecution of the work of the committee should not be withheld, and anything that we, as an association, can do, should be done to further the work of this committee. No matter with which we have to deal, is of more importance. We cannot hope to cope with the problem of oral health by the measures which we have been pursuing in the past. Tooth decay and Pyorrhea is advancing far more rapidly than are the remedial measures which we are instituting, and the only hope for the future lies in the prevention of these diseases thru the instrumentality of a knowledge of the beneficial effects of a clean mouth. The constitutional amendment upon that subject, which will come up for passage at this session should receive the approbation of the delegates and be unanimously carried.

Dental Index.

Every student of dental literature has felt the necessity of an index that would assist him in the work of studying any subject that he wished to look up. At the present time there is no such work, and the attempt to look up the bibliography of any dental subject is a well nigh hopeless task for the ordinary individual. The consequence is that most of the papers that are written today are devoid of this most essential aid to the studying of the matter presented by the essayist, and not only that, but very few essayists have made any serious

study of the literature bearing upon his thesis, owing to the difficulty of finding the matter upon the subject in hand Dr. A. D. Black has felt the need of such a work and has labored, practically alone, upon the matter for a number of years. The first installment of that work is now ready for the publisher and will soon be available, but the funds for the prosecution of the work have been advanced by Dr. Black and some of his friends. If this most essential work is to progress and the work be carried up to date, and be kept to date, some means must be found to finance it. It is most probable that the sale of the completed work will almost, if not quite, take care of the financial burden, but it is not fair to make some man or set of men assume an obligation that is the duty of the whole profession. I, therefore, advise the taking up of the subject by the Board of Trustees and that they be instructed to formulate some plan by which this work can be carried on and kept up to date.

Nomenclature Committee.

In relation to the above subject is a matter that has a bearing upon the present difficulty in dental literature that is almost as bad as the lack of an index, and that is the confusion of dental nomenclature. It is true that the difficulty is not as bad as it has been in the past, for the committee of the Faculties Association has done good work, but the need is still urgent for there has not been the general adoption of a uniform nomenclature by all of the members of the profession. The perusal of our literature is proof of the assertion. Some words are used by some authors and other words by other men to convey the same meaning, making for confusion in the minds of the readers. The National Dental Association should be the final court in all such matters, and I therefore advise the appointment of a nomenclature committee that shall have jurisdiction upon the subject and shall be the final court of appeal upon all controversies concerning the nomenclature of the profession.

Place of Holding Conventions.

The National Dental Association has assumed such majestic proportions in the immediate past, that the place of holding its annual convention is becoming a very serious problem. The city desiring the convention in the future, must side track every other activity at that particular time, for the hotel and convention facilities of any city will be taxed to the utmost by the convention of the National Dental Association. In view of some of the difficulties which we have encountered in the immediate past, I would advise that all invitations for the entertainment of the convention be presented two years in advance and that the Board of Trustees be empowered to investigate the facilities of the city for the entertainment of the convention, and that the approval of the board, or a committee appointed by the board, be necessary before the final selection of the city for the convention.

Silver Anniversary.

This year will complete the 25 years of the organization of the National Dental Association. It would be very fitting indeed to recognize the Silver anniversary of the organization in some appropriate manner at the time of the next annual convention. It would be presumptuous for me to attempt to advise the incoming administration concerning the conduct of their convention, and I do not wish to do so in any sense, but simply call the attention of the organization to the splendid history of the past twenty-five years and suggest some adequate method of magnifying the glory of its accomplishments.

SUMMARY.

1. "Benefit accruing to us by organization.

2. "The problem of focal infection.

3. "Consideration of Research Commission and advising continuance of the work of the commission.

4. "Appreciation of our Journal and its Editor and Journal Committee.

5. "The American Educational Council, an appreciation of its work and advice that it be supported by the National Dental Association.

6. "Method of the conduct of this year's convention.

7. "Advising the appointment of an Extension Club Committee.

8. "Advising greater support of the Oral Hygiene Committee and passage of amendment to the constitution proposed in favor of such work.

9. "Advising suport of Dental Index.

10. "Advising creation of Dental nomenclature committee.

11. "Remembering the Silver Anniversary.

12. "Advising that invitations for the annual convention be received two years in advance.

In conclusion, allow me to thank the members of the association for the distinguished honor that they have conferred upon me and for the loyal manner in which they have supported the present administration. In particular do I wish to express my appreciation to the officers and committeemen who have labored so assiduously and efficiently to make the convention of this year a success. If any credit is due for the convention of this year by far the greater part is due to their efforts. The local committee, upon whom has fallen the greater burden, is to be commended for their intelligent and faithful work. To all of these men and to the splendid personel of the entire association, I wish to express my appreciation of their support, and the unfailing courtesy which has been given to me thruout the term of my office.

PEDIADONTIA.

By P. R. Thomas, D. D. S., Minneapolis, Minn.

(Read before the National Dental Association at Its Twenty-third Annual Session, New Orleans, La., October 20-24, 1919.)

IN PRESENTING for the consideration of the dental profession a paper on Pediadontia (children's teeth), I am actuated by a desire to call attention to that most neglected part of our population, the little children between the ages of two and six years. From a dental standpoint, little attention has been paid them. The condition of this part of our population is so closely related to the dental conditions in our schools that it merits serious consideration. We are confronted by statistics gathered in our schools from time to time, showing the terrible conditions found among the children examined from a dental standpoint. For the correction of these conditions, education of the children, establishment of clinics, instruction in the use of the toothbrush, and other means have been advocated and used. It is from but few parts of the country, however, that the results of this work have been reported.

The reason for the lack of more widespread work along this line, has been the inability to educate the proper authorities as to the value of the work, as well as a lack of funds which might be appropriated for dental clinics. We no sooner make a start in the work of repairing the teeth of children in schools, and begin to make progress, before a new influx of children, with equally bad mouth conditions, confronts us. To care for these new patients, in addition to keeping up with the repair work among the older children, previously treated, is a monumental task.

Year after year this condition does, and will confront us, and something must be done to get the new pupils started in school with better mouth conditions. In all school and institutional work, we are hampered by a lack of operators. However, this phase of the problem has been much bettered by the entrance of the oral hygienist into the field. It will take years before oral hygienists in sufficient numbers, can be educated to carry on this important work.

In addition to all the means being used to relieve the situation confronting the dental profession, have we not neglected a most important factor, which might change the status of affairs and greatly help in this struggle against diseased conditions in the child's mouth? Can we not approach the problem from the standpoint of bringing the children up to school age with better mouth conditions than is at present the case? In my judgment, the greatest aid in the betterment of mouth conditions in our schools, will be found in the education and care the mother can give the child between the ages of two and six years, so that when the child enters school, it will do so with greater freedom from caries, and the consequent destruction of tooth structure. Granting then, that the mother, caring for the health of the child, is the logical caretaker of the child's teeth, what can we do to educate the mother?

The expense of buying toothbrushes, without doubt, deters thousands of mothers with large families, from properly caring for the teeth of their children.

For the reason, then, that we must aid the children of the poor, as well as the children of the rich, a cheap means of caring for the children's teeth must be demonstrated to the mother. As a means to this end, and on account of the cheapness of the materials required, the use of orange or bass-wood sticks with a dentifrice, or some cheaper material, such as precipitated French chalk, can be recommended; and for polishing the interproximated surfaces of the teeth, fine white wool yarn, or any other carrying medium, will suffice.

We have at hand, then, materials for caring for children's teeth, easily within the means of all mothers, for the care of all the children. The education of the mother by the dentist, or oral hygienist, should cover many things of importance in relation to the care of the teeth, and the building up of a normal, healthy mouth. Having devoted considerable time to this kind of educational work, I believe the mother should be taught the following, among many other things, with regard to a child's mouth.

First, the value of the deciduous teeth as related to the child's health and development. The health and development of the child depends upon its ability to play well, sleep well, and eat well. That the lack of desire to play, to sleep, and to eat is induced more by aching, diseased teeth than all other factors combined. That the structure and occlusion of the permanent teeth, is largely dependent on the preservation intact of the deciduous teeth.

Second, that the care and preservation of the child's teeth is dependent upon the mother's efforts, for the child will permit the mother to care for it, where it will not permit a stranger to do so. That the preservation of a healthy, wholesome mouth condition is the result of systematic, thoro and regular care, carried out in detail.

Third, that the surfaces most vulnerable to decay in the child's mouth, are the occlusal surfaces of the molars, and the inter-proximate surfaces of the teeth.

Fourth, that as a supplement to the proper daily use of the toothbrush, all the surfaces of the teeth should be polished at least once a month with an orange or basswood stick, pumice or powder, and the inter-proximate surfaces polished with flat floss silk, or fine white wool yarn. That this will protect the child's teeth, between eighty-five and ninety-five per cent, against caries, if thoroly and regularly done.

Fifth, that as an aid in the prevention of caries, the occlusal surfaces of the deciduous molars should be protected with cement in the same manner that Dr. G. V. Black advised the protection of the six-year molar.

Sixth, that the six-year molar is not a temporary tooth. That it is not replaced by another tooth, if lost, and that erupting as it does, in early childhood, it must be especially the object of care and should be protected by the use of cement rubbed onto the occlusal surface, as soon as the tooth erupts.

Seventh, that the normal development of the jaws, preparatory to the eruption of the permanent teeth, is dependent largely on the development of the muscles of mastication. For this reason, the child should thoroly masticate all its food. That the food should be prepared in such a way as to require thoro mastication.

Eighth, that according to Dr. Dewey, in his work entitled "Practical Orthodontia," five of the nine acquired causes of malocclusion are due to the loss of deciduous tooth structure. That the results of habits of childhood, such as thumb-sucking, tongue-sucking, and the use of pacifiers, are destructive to normal occlusion.

Ninth, that candy, and carbohydrates in other forms, is the worst enemy of sound teeth, for the reason that the destruction of the teeth by caries is most easily induced by chemical changes in these substances, lodged about the teeth.

Tenth, that a thoro knowledge of a good technic in the use of the toothbrush, is one of the greatest means known for the preservation of the teeth. That the child should not be depended upon to protect its own teeth, thru its own efforts, but that the use of the brush, in the hands of the mother, in the care of the child's mouth, is absolutely essential in early childhood.

The technic of hand-polishing the surfaces of the teeth should be carefully taught, for it is only by systematic care that the desired results can be obtained. At regular times, and regular intervals, thoro brushing of the teeth, and prophylaxis carried out in detail is essential in order to prevent the beginning of tooth destruction, for prevention must be the ultimate goal.

Observation makes it clear that the Dental Profession of today is not fulfilling its duty in the dental education of the public, and particularly, of the mothers. There is no widespread, systematic effort being made to carry much-needed information to all parts of the country. What we need is a strong, well-financed organization to carry on this much-needed educational propaganda. In oral hygiene work lies the dentist's greatest opportunity for good, and it is up to the dental profession. Thoroly systematized, this work can be of inestimable value to all people, especially in its relation to the health and development of the children.

No time can be used to better advantage than in helping educate the mothers of America, by teaching them methods useful in preserving the children's teeth. In closing, let me emphasize the necessity for the fullest cooperation of every member of the profession in this work. Dentistry for children must play a leading part in the health work among the children of our country. Remembering that a normal, healthy mouth is the true basis of good health, may we not all be inspired to greater effort in this important cause. A normal mouth with a full complement of prophylactically clean teeth is splendid health insurance.

Discussion.

Haidee Weeks Guthrie, New Orleans, Louisiana.

Dr. Thomas is correct in calling attention to the common neglect of the child's mouth. He has very properly pleaded for the education of those who guard the child, and has evolved a plan for this education, beginning with the mother. This works well in certain types of families; but, alas, we are leaning on a broken reed if we expect to take the average grown-up woman and give her, by any possible system of instruction, sufficient knowledge and technic to properly care for her child's teeth. She has, in all probability, thruout her life, neglected her own. We must educate the mother in oral hygiene. Yes, but when she herself is a school child. Then, and only then, can the mother be made an active and capable aid in our campaign. We must then in this case, wait years for our results. On the other hand, the teacher, acting under instruction of a competent dentist, can bring home in a most complete and thoro way the lessons of oral hygiene. The teacher has an open mind and can be taught.

I cannot approve at all of a substitute for the toothbrush. The use of the toothbrush is the shibboleth of the campaign and the brush must be made its symbol. Any mechanical aid to do the work of the toothbrush such as chewing of coarse food, use of orange wood stick and pumice, etc., must be welcome, of course, but never as a compromise or a substitute.

It should not be difficult if we face our task of propaganda, to secure the demanding of a certificate of a clean mouth with all cavities properly filled as a pre-requisite to attendance at school exactly as we demand now a certificate of vaccination.

The work is in no sense the dragging

of a lengthening chain, and as the years go by will narrow itself down to an intensive and concentrated effort on the earlier years. Unless this is done, in my opinion, the work would be truly stupendous.

An institution or a community unit whose children's mouths are once put in order can be kept in good shape with a comparatively small effort, provided there is some one constantly on guard to see that the work goes on and that caries is checked before extensive damage is done.

I have several times made the statement that the battle for the child's mouth is lost or won by the age of 8. Under proper schooling in oral hygiene between the ages of 2 and 8 years, if the mouth is kept in order to this age, very little dental work is needed after that time. My work has amply confirmed this statement. I am now caring for a community settlement of 1500 children without assistance except from lay helpers and without remuneration. I am able to do this because the social service workers give me the most perfect cooperation.

One of our activities is a day nursery where we average 150 children from the cradle to 8 years. For two years I selected and observed 50 of these children with average mouths between the ages of two and four and we did not have a single case of caries in the two years. We used a systematic toothbrush drill and regular and periodical inspection of the mouths.

In a previous paper published in 1916, I made this statement: "Even in intelligent families today the child's teeth are sadly neglected. Education of the parent is essential; but there is no way to secure this instruction excepting thru the children themselves at school."

I am more than ever convinced of the truth of this. I now wish to go a bit farther and ask you for a pre-requisite to the instruction of the child. It is for the proper instruction of the dentist himself and the doctor in his school.

The medical profession today is asking us for a character of work which we, as a profession, are not prepared to give because of defective training in the care and management of the child himself. That the child's mouth is neglected is true; but we are partly to blame. The average dentist would gladly part with his child patient, if he were not to lose prestige thereby. As it is, he gives the child's mouth insufficient care because he dreads the encounter or perhaps lacks the patience or tact to put himself in proper relation with the child. He salves his conscience with the thought of the temperamental difficulties of the case and puts silver nitrate into carious first molars and lets them go on to destruction.

He has never had specific instruction in the art of managing the child and quite often only a superficial attempt at instruction in the treatment of the conditions encountered in the child's mouth which are peculiar to the age of childhood.

Can we expect to give to the medical profession the guidance which it asks for, if we neglect in our dental colleges the teaching of this branch?

My opinion is that the object we all wish for, namely,—the proper care of the child's mouth is to be obtained by,—

1. Systematic and regular dental inspection in the schools;

2. Instruction of the child and his teachers in oral hygiene;

3. Employment of full-time dentists, who themselves have received a special training in the work.

4. Employment of a force of social service workers whose duty it shall be to seek the cooperation of the parent. This is to be done by visiting the homes, by organization of Mothers' Clubs and keeping up an interest in their meetings.

This looks like a formidable program. It doubtless is an expensive one. However, we know its value and if we convince the mothers of our own and the

medical profession of its necessity, the public will know and soon the needed funds will be provided. It is an uphill fight for a few of us to ask the public to subscribe to an educational dictum which the profession-at-large holds in doubt. We must specially educate the dentist for service in schools who in turn will instruct the teacher and the social worker. All of these will teach the mother and finally all will unite to swing into the movement the greatest of all available forces, the interest of the child himself in his own welfare.

A. C. Thompson, Detroit, Mich.: Dr. Thomas' splendid paper, emphasizing as it does that which should be the very foundation of oral hygiene education, namely the care and training of children from the very beginning of dentition, should receive a thoro investigation and discussion by this department. One point emphasized by the speaker was the importance of reaching children before school age. This is beyond the field of the school dental clinics, and how to reach those of preschool age is not made clear. In our work we are endeavoring to reach this unexplored field thru the board of health, under whose supervision we work.

In conclusion I would suggest the advisability of the National Dental Association establishing a new department, to be known as the Pediadontic department.

Dr. Rich, Nashville, Tenn: I would like to ask Dr. Thomas to give us in as few words as possible, some idea as to the technic he tries to instill into the mind of a mother taking care of her child, say two or four years old?

Dr. Washburn, St. Paul, Minn: Along this line the great work that is being done by such members of the profession as Dr. Thomas and Dr. Guthrie, will establish a system or put forth an idea for the general practitioner that many of them will turn the idea down as being not a practical one, namely, because the mother does not care to take care of children.

Dr. Thomas: A discussion of the child's mouth opens up a subject of such tremendous proportions that it could not be covered in a short paper. It appeared to me that I might be able to suggest some educational points of value which the dentist might discuss with mothers while the mothers were having their own dentistry done. If times like this are not taken advantage of in daily practice, we are missing a fine opportunity for educational work. Expense enters into every question of today and is essentially a factor in the solution of this great problem: The Conservation of the Child's Teeth. A hand technic in prophylaxis using a stick properly devised, can be taught a mother so that all the little children in the family can be cared for where the cost makes it impossible to own toothbrushes. In cases where deciduous teeth are necessarily extracted, the spaces must be maintained with proper space maintainers. None of the deciduous molars should be removed without this space being maintained. The reason is obvious.

There are a number of instruments of this kind on the market; I am not recommending any particular one. You can use a pocket knife and make a prophylactic stick in two minutes. As far as the instrument is concerned I think we all know we can go out in the back yard and, if necessity arises, we can make a prophylactic instrument with any kind of a stick. The thing is, I wish to suggest, the greatest amount of good to the greatest number of children. I have taken care of some five hundred children since the first of April. I tried to bring before your minds an idea which would be best and available for any mother if she had a jackknife and stick and some instruction.

THE POSSIBILITIES AND IMPORTANCE OF EDUCATING THE DENTIST THRU ORGANIZATION.

By E. R. Swank, D.D.S., Des Moines, Iowa.

(Read before the National Dental Association at Its Twenty-third Annual Session, New Orleans, La., October 20-24, 1919.)

DENTISTRY, quite as much as any of the specialties of medicine, is logically a branch of general medicine. Traditions and circumstances attending the birth of dentistry, have long separated the two professions, and have operated against public welfare, preventing recognition of this fundamental fact. In the light of our present-day knowledge, it is obvious to students of both sciences, that neither can render its highest service to the individual in the interest of public health, unless some means of post-graduate education is carried on that enables the older practitioners to keep pace with the rapid advance of the sciences, and that furthermore forms a bond of understanding and cooperation uniting them into closer fellowship.

The foundation for our professional education is being gradually broadened, and the pre-requisites of its applicants are also becoming more rigid thru the raising of the standard of requirements, and results demanded by our Dental Colleges and Dental Examining Boards, thru the splendid and untiring work of the Dental Educational Council of America. This is as it should be, but this alone is not sufficient. The college graduate, after he has received his diploma, has yet a long way to travel, and our profession demands of every man that he be not self-satisfied with the education that he acquired in college, but that he become a "researcher" and delve into the problems of our profession and by his unselfish and untiring effort, enrich it and maintain it on a parity with medicine, our mother profession.

Cooperation is the secret of most successes. The lack of cooperation is the cause of many failures and egotism is a germ that inhibits cooperation in our professional societies. "No man can stand alone in life, or work alone in a business or profession and at the same time obtain for himself the same rewards, money, influence and happiness, as when he works with and by and thru the organization and the social body of which he is a part." This law is inexorable. All great battles of the recent war were planned and executed thru organization, and system. All great business enterprises are carried on according to the same law, and no less is the success of our Dental Institutions dependable upon this same fundamental fact. No river ever rises higher than its source and no Dental Society will ever grow beyond the spirit and aim of its executives. If a man thinks in penny values, he will deal in pennies and peanuts, but if he thinks in five or seven figures, he will deal in larger resources and enterprises. There are no accidental successes in the business world. Luck, or rather chance, may seem to play a part in placing a man in a favorable position, but luck does not keep him there. Thus preparedness is a

fundamental pre-requisite to success and I leave it for you to know that the dentists of tomorrow, who will lead our profession, are the men of today who are earnestly and diligently delving into and studying out and grasping the knowledge that is essential to the leadership they will hold.

The greatest problem of the Dental Societies today, lies not so much in finding new operative procedures or new methods of practicing our profession, as in keeping the majority of the profession abreast of the progress already achieved. It is not by the prominence or ability of a few men who stand out, as it were, as stars in a night, that set the standard for our profession, but it is the great body of men in the little towns and villages that make the average and regulate the caliber of the professional standard. It is this body of men we must look forward to helping and it is their problems we must solve.

The Dental Colleges and Dental Journals are important factors in our progress, but we cannot deny the fact that the masses of our profession are moved forward thru the work of the local district and State Dental Societies. The Dental College is the principal force in the early and formative period of a dentist's career. The Journals serve him in advising him of the new things of his profession and the scientific progress made, but the society is the source of his real advancement by fact of its power to teach him first hand and by word of mouth, as he was taught in college, and allowing him to rub shoulders with his fellow-man and receive his viewpoint.

Since childhood, we have been taught in our schools by certain methods of study and training, to grasp and assimilate certain facts which then become our property and our knowledge. In our dental colleges the same system of procedure is practiced. In our Dental Societies it is not. What is the result? Simply this, only as our Dental Societies arrange, plan and execute a program along a teaching line do they measure up to and hold the attention of their constituent body.

We have in our profession, three classes or types of dentists, the successes, the mediocrities and the failures. The successes are always open-minded, receptive and willing to grasp new facts from any source open to them and at any and all times. The mediocrities are not so receptive to new ideas and are very careful not to accept new things until after they have become the generally recognized practice of the profession at large and are demanded of them by their clientele. They are not trail-blazers, but are followers. They lack the initiative of leadership, are always raising the question of doubt and are never sure of themselves. They are afraid to assert an opinion for fear of criticism and the same fear keeps them from giving clinics, reading papers and taking any active part in society work. The last class are the failures who lack even the initiative to follow. They are the men who have chosen a wrong path in life and sooner or later drop by the wayside.

By what standard are we to measure an organization that is to meet the requirements of our day? Not by the standard or by the methods of conducting our society meetings of fifteen years ago, or even five years ago. Conditions have changed and we must change with them.

A close study of conditions in Iowa, (and I think it is representative of most other states) reveals the fact that approximately 25% of our profession is practicing in the city and 75% in the country. The city man has every opportunity for keen competition. By every reason of competition he is spurred on to keener study, to more accurate work and a fuller and broader knowledge of his profession. He is able to join himself with other men in the formation of study clubs that further

develop him and solve his problems. The isolated country dentist has no such opportunity afforded. The problem of reaching this man is of prime importance and is essential to raising the standard of the dental profession as a whole. He is generally the man in the mediocre class and to him the Dental Societies should look forward to helping. There is but one way in which this man can keep pace with progress; that is thru continued application and the study of his profession thru Societies, Study Clubs and Dental Journals.

System is the key that unlocks the door of efficiency and success. A large manufacturing plant such as produces the Ford automobile for example, has a central head. Radiating from this head are sub-heads or Superintendents of Departments. Each department is further sub-divided accordng to its needs ad infinitum. In the dental world we have the N. D. A. as a head. Its components, or sub-heads, are the State Societies, further sub-divided into district or local societies, and in the district and local societies, we should find the real spring of knowledge in the study clubs.

But is the N. D. A. a real head, and does it exercise proper supervision over its component State Societies? Then also, are all our State Societies conducted and promoted along practically the same lines? Are all State Societies subdivided into District Societies which are component parts and under direction of the Superintendent of District Societies? Does the State Society or the District Society have smaller bodies or study clubs within their jurisdiction?

In an effort to help answer these questions, I prepared a questionnaire which was sent to the secretary of every State Dental Society and to the deans of all our Dental Colleges. I tried to secure an expression from these sources, of the organization and methods of conducting the State Societies and their attitude in regard to Post-Graduate work. The following were the questions asked the Secretaries of State Societies:

1. How many dentists practising in your state (approximately)?
2. How many are members of your State Society?
3. Is your state divided into District Societies? If so, how many? Are they components of your State Society?
4. Do you have a Superintendent of Districts who endeavors to coordinate the work of the District and State Societies?
5. Is your executive committee appointed or elected?
6. Who selects talent and clinicians for your meetings? By what particular method?
7. Does your State Society give a so-called Post-Graduate course at its meetings? What plan do you follow?
8. What is the average attendance of your state meetings?
9. How many study clubs have you thruout your state? (Approx.)
10. Would you think it advisable for a committee from the N. D. A. to assist Study Clubs and report on the results attained by them?
11. Do you approve of individuals establishing Post-Graduate schools along the lines of their specialties?
12. Do you favor Dental Colleges establishing Post-Graduate courses, using the same teaching staff for academic and Post-Graduate work?
13. Would you think it a good plan to have a Superintendent of State and District Societies in the N. D. A. who would keep on file a list of available clinics and clinicians and otherwise assist the State and District Societies in planning their programs and Study Clubs?

The following were the questions asked the Deans of our Dental Colleges:

1. What was your student enrollment for 1918-1919?

2. Do you offer a Post-Graduate course?

3. Do you grant a degree for Post-Graduate work?

4. What recognition, if any, is given for successfully completing the course?

5. Is the Post-Graduate work given by the regular staff?

6. What is the Post-Graduate enrollment?

7. Is the course open to students during their Senior year?

8. How many courses do you give? What time of year are they given? Of what do they consist?

9. Are the classes filled to capacity?

10. How long are the courses?

11. What is the professional attitude toward Post-Graduate work? Remarks.

12. Do you think State Dental Societies should offer Post-Graduate courses? Remarks.

13. Do you think it advisable for individuals to offer so-called Post-Graduate courses along the lines of their specialty?

14. In your opinion, briefly, what is the best method of handling the problems of keeping the Dental Practitioner educated up to the minute in the advances of Dental Science?

15. Are senior students given an opportunity to receive special instructions and inspiration by individuals who are especially successful in their specialties?

I shall not attempt in the time allowed me for this paper to discuss the results of each question separately, but will summarize as a whole the answers given.

The number of dentists practicing in a state varies from 75 to 5,500. I found in one state 100% of all eligible dentists members of the society. In others I found less than 20% were members. An average membership of State Societies shows approximately 45% of practicing dentists members of societies. Fifty-two per cent of the State Societies are divided into districts. To my mind the larger a body without sub-divisions, the more unwieldy and unsatisfactory is its work. Sub-division of State Societies into component districts, coordinated under direct supervision of one head or committee, will work better and more efficiently. I found 81% of our societies without such a superintendent or committee.

In regard to the selection of talent, no particular method has been adopted, but almost any haphazard way of selecting such clinicians and essayists as can be secured, without much real thought apparently as to any certain program, procedure or subject to be presented at a particular meeting. No system is followed in conducting their meetings and no goal is set toward which they are aiming. Is not this one reason why only 45% of the dentists of our country belong to societies? Is the society living up to its possibilities, organizing and commanding attention, solving the problems and educating the dentist as it might? The Dental Society must become a real educational center for the dental practitioner. It is in reality a post-graduate school, and until such time as our dental colleges meet this requirement for advanced education, our State Societies must assume this responsibility.

From the replies I received, eighteen societies have made an attempt of post-graduate work. However, 50% qualified their answers by saying no special system had been followed and, in some cases, they had abandoned the course entirely as it was not conducted in such a manner as to meet popular approval of the membership. In two states only did I find a real effort of organized and systematized plans to conduct post-graduate work. These societies were divided into classes with a competent instructor over each subject and the school was formed along collegiate lines. However, a student was permitted to enter

but one class at this session. Thus the instructors were assured full attendance to classes, and the student was enabled to learn and assimilate his subject in a way that proved satisfactory and beneficial.

The question as to the number of study clubs in a state was exceedingly surprising. I found only forty-nine clubs in the whole country, twenty State Secretaries did not know of any clubs within their state at all. Self-satisfaction is a germ that inhibits initiative and progress and is the cause of much of the indifference to study clubs and society work. Success is attained only by application and diligent study. The minute a man in his own mind becomes satisfied with his position in the affairs of life, his professional, social or financial place, that minute he begins to go backward. Progress is forward, never backward. Apathy in the matter of Study Clubs in the dental profession, is the cause of mediocracy. Until we wake up and realize the importance of the place Study Clubs must have in our professional work, we will never be able to raise our standard.

The question relating to the attendance at State and District meetings, was very disappointing. According to figures given, not 40% of our society membership attend their State meetings and not 25% attend their District meetings. Carried a little further this means but slightly over 10% of the dental profession attend their society sessions. This thought will bear repeating, that our societies never rise higher in efficiency in holding attention of their membership than the aim and spirit of their executives. Are we selecting the right men for the right places and do we keep efficient men in the harness, or do we believe in passing the honor around to the detriment and loss of the society as a whole? An efficient industrial plant does not annually pass the honor of Superintendent or Departmental head around among its various employees. Neither should an efficient dental organization pass the working offices, such as the Executive Committee, Superintendent of clinics or Program Committee, or Executive Council of District Societies among new men every year. Provision should be made to keep officers of this sort in office a term of years, rotating the officers by districts and years, in order to maintain experienced men to efficiently manage the affairs of the organization. Such provision is not maintained for long enough periods in most of our State Societies and is another cause of lack of efficiency. Airships do not rise from the ground and fly if too heavily ballasted. Neither will our Dental Societies fulfill their possibilities and mission in the world if manned by too many inexperienced officers. They constitute too much ballast and should be discarded and a reorganization made.

Three methods of procedure are now in vogue in conducting post-graduate work. (1) Short courses known as extension courses are available upon a few subjects in some three or four of our Dental Colleges. (2) Individuals especially proficient in certain specialties of their professional work, conduct small classes in various sections of the country under the so-called cognomen of post-graduate schools. The third method is for State Societies to conduct their meetings along post-graduate school lines. There are advantages and disadvantages to be found at present, in any one of these methods.

The approval of individuals establishing post-graduate schools along the lines of their specialties was given by nineteen out of thirty-five State Society officers and disapproved by sixteen. And from the reports of thirty-two out of forty-six deans answering this same question, twenty were not in favor of individuals establishing post-graduate courses along lines of their specialties, and eight qualified their answers of ap-

proval, provided the individual was especially fitted and equipped to teach his subject, leaving four who gave no answer.

Answers from thirty State Society officers to the question, "Do you favor Dental Colleges establishing post-graduate courses, using the same teaching staff for academic and post-graduate work?" resulted in thirty affirmative answers for colleges establishing post-graduate courses, but were variable as to the advisability of using the same teaching staff, with twenty favoring the use of such a staff. Ten were unqualifiedly opposed to using the same staff. From the reports of the Deans of Dental Colleges on this same question, I found that most of them, until such time as the colleges are able to establish regular post-graduate work, are in favor of the Dental Societies giving short post-graduate courses, but they feel that in order to obtain the best results with competent teachers and proper teaching facilities, it is a problem for the Dental Colleges to solve and not for the State Societies.

I found an almost unanimous opinion that post-graduate work was essential to a dental practitioner if he is to keep pace with the progress of his profession. Study courses in societies under the leadership of competent instructors offer only a temporary solution and should be so considered in the conduct of societies. Such courses are necessarily intensive but do not take the place of good post-graduate work.

The deans were also asked the following question: "Do you think Dental societies should offer post-graduate courses?" The following is one of the answers:

"I think the country should be divided into educational centers for post-graduate work and that the University schools in these centers should give the courses under the direction of an educational committee of experienced teachers. These courses should be in full accord with the State Societies and the schools should run independently of the regular college instructions. The teaching faculty should be composed of the best men obtainable in the branches taught."

A quotation from the dean of one of our largest dental schools says: "If under-graduate colleges are to institute post-graduate courses, a separate faculty of specialists should be employed. The interference of special courses with regular under-graduate work should not be considered. Post-graduate school as a separate institution would be the better arrangement, but it will be years before this is brought about. A post-graduate course should lead to a Post Graduate degree and should require from one to two years attendance; with a definite curriculum, short courses to be called special courses, not post-graduate courses, credit to be allowed for each course, depending on time and subject. To illustrate, one credit for two weeks course; two for four weeks. When the practitioner has attended a sufficient number of special courses to receive eighteen credits, a post-graduate degree may be applied for, Doctor or Master of Dental Science. If special courses are to be of worth, a definite requirement should be stated."

The majority of the deans are giving serious and earnest thought to this question and from the discussions in the meetings of the Dental Faculties Association of American Universities and the National Association of Dental Faculties, we may, in a measure, look forward to the solution. However, only as the individual dental practitioner demands of our colleges and our societies establishments of definite requirements, will we be able to deal in a satisfactory and decisive manner and hope for its final solution. And this is not all, for at the present time we have in our country, Dental Examining Boards whose ideals are not as high as they might be, that are lax in their duties, and men of a

type who never reach above the mediocre class and often fall in the class of failures, are permitted to pass thru and become licensed. Until the time comes that the recommendation made by Doctor Logan in his President's address at Chicago last session, establishing a uniform and standard National Dental Examining Board is a fact, will we begin to solve this problem and the scales will fall from the eyes of those responsible for our dental curriculum and for the program of our Dental Societies.

The final solution of the post-graduate problem must come from three bodies formed by the Dental Colleges, Dental Societies and Dental Examining Boards. Thru the national organizations of these bodies will come discussions, plans, ideas, and recommendations that will eventually bring about the ultimate triumphant solution. This is the goal toward which we must work with a unity of purpose and cooperation with one another.

With the thought in mind of coordinating, standardizing and making easier the work of State Societies, I asked the State Societies the following question: "Would you think it a good plan to have a Superintendent of State and District Societies in the National Dental Association who would keep on file a list of available clinics and clinicians and otherwise assist the State and District Societies in planning their program and study clubs?" Thirty-six answers out of thirty-eight were affirmative, with but two negative.

From the above evidence submitted from the Secretaries of State Societies and Deans of Dental Colleges, I wish to draw some conclusions and outline some definite, reasonable possibilities for improvements as I see them in our present dental organizations.

1st. "At present we are not living up to our obligations and possibilites in either our Dental Societies or our Dental Colleges."

2nd. "Post-graduate work is a problem for the Colleges and not the State Societies." Teachers in our public schools have colleges in which to train in order to be able to secure for themselves higher education. In turn the college professors have post-graduate schools in our larger Universities that are endowed with special funds and equipment for purposes of higher research work that is essential for their further advancement. The same is true of the medical profession. They have the large hospitals where they can go, and beyond these such large endowed foundations for medical research as the Rockefeller Institute and the Mayo Brothers Institute at Rochester, Minn. The Dental Profession has no such higher educational advantages, and it is evident such institutions as our medical brothers are privileged to maintain, give them an unlimited field for developments and are so organized and controlled that they give recognition and authority to the opinions and technical procedure of specialists in certain branches of their profession.

The dental practitioner goes thru an under-graduate Dental College, but if he wishes to further specialize along a particular line, he has nowhere to go unless to a so-called post-graduate school conducted by private individuals for private gain where he pays a high fee and does not come out with a properly recognized certificate showing he has fulfilled prescribed requirements of a definite nature, and recognized by sovereign laws of his State in the same manner as is granted under-graduate schools. This is a need the dental profession is facing and should be agitated so strongly that our Dental Colleges will become impressed with its importance and make plans and take steps to meet it by establishing separate post-graduate schools in their colleges. But three or four of our colleges at present have made an attempt to establish post-graduate work of this kind and then it was in the

nature of an experiment with short courses. The results, however, have fulfilled their expectancy and they are laying larger and broader plans for extension of the work.

3rd. "The Dental Colleges should establish separate faculties of specialists for post-graduate work with a curriculum of definite requirements leading to a Master of Dental Science degree." Only as we labor toward a goal do we accomplish desired results. As a man enters his freshman year in college, he looks forward over the span from the first to the last day, four years in the future, and in his heart wells up that great overwhelming desire to reach that day. The trials, the pit-falls and discouragements that he must bear and overcome, serve to further his ambition to keep his face steadily to the front and reach this goal. But how about the man in practice, who comes to the point that he feels the very urgent need of higher education along certain of his professional lines? He feels this need but where can he turn and enter a post-graduate school and pursue a prescribed course of study that will satisfy him and equip him to meet the demands he has in mind? He is groping for certain knowledge and it is furthermore true, he is also in search of certain honors or recognition for the labor and work he has accomplished. He will work harder, steadier and longer, if need be, for such an honor or recognition and it is for our dental colleges to take the next step with him and provide an institution meeting the demand and granting a degree commensurate with the place it occupies in the field of higher education. The degrees of Doctor of Philosophy, Doctor of Divinity, and Doctor of Science, are granted only in recognition of work done beyond that of the under-graduate college and the subjects leading to such degrees are taught by separate staffs in our larger Universities and constitute post-graduate college work. Special equipment for research work is provided in these institutions, and in many instances, fellowships are available for men pursuing such work. Thus incentive for advanced work is before a man and the earnest man is given every opportunity to proceed with his ambition. From the ambition of men come the great things of this world and also the advances. Every possible means should, therefore, be given for progress and this is as applicable in the dental profession as in any other line of human endeavor.

4th. "Dental Societies should limit their activities to coordinating isolated efforts and encouraging clinics, essays and research work by individuals and opening its sessions as a Forum for discussion of the practical and everyday problems confronting its members." The State Dental Society should be an experimental laboratory in order to carry out this plan. It is here, home talent should be developed and new ideas given a try-out. It is here that men with their coats off and sleeves rolled up come shoulder to shoulder and thrash out the little things that are constantly arising in practice. It is here that papers are read and new theories propounded and discussed. It is here that new procedures and new instruments for handling the same should be exhibited. This is the logical place for such things and the society should not enter the field of post-graduate work, for they lack equipment, time and facilities for handling the classes. Attention at such meetings cannot be successfully concentrated, as it necessarily must conduct diversified subjects under conditions not permanent and often handicapped in many ways that distract the mind of its members. Then too, and this is a fact not to be lost sight of; many members attend their society meetings for the reunion of friendships and acquaintances of college days, and this is a tie that binds them together as a society. It is this feature that is as uppermost in their minds as

any other and is absent when attending regular post-graduate work in some ininstitution, as they are then strictly business, and are willing to sacrifice time, pleasure and money for the ends they are working toward.

5th. "Elimination of all so-called post-graduate schools and courses conducted by men along lines of their specialties, but such men of merit should be affiliated with post-graduate departments of colleges where just and due recognition is given both to themselves and their work." Thus commercialized post-graduate courses are eliminated and real professional advancement is attained and granted upon a practical and deserving basis. These men by the peculiar fitness they possess are logically the proper men to become teachers of their lines, and the recognition of these men in the faculties of post-graduate schools, will work benefits two-fold; first, for the individual by recognizing his ability and work by law governing post-graduate dental schools as it governs under-graduate schools; and secondly, giving added prestige to the Dental College and raising it to a higher standard of usefulness. Dentists of ability who today are striving by their own efforts to teach a certain thing and are conscientiously endeavoring to promote and raise the professional standard will have their efforts coordinated and recognized and the task before them will find easier and quicker solution. Elimination in this manner does not work a hardship upon an individual except in rare instances where personal greed enters, and such elimination purifies the profession as a natural and beneficial consequence, self-adjusting in most cases in its action.

6th. "Provision should be made in the N. D. A. for a superintendent of State Dental Societies that will coordinate their work and purposes and strengthen and unify these organizations, and incidentally give added strength to the N. D. A. by such supervision." Under direction of the Board of Trustees or House of Delegates, provision should be made for an assistant secretary of the N. D. A. called "The Superintendent of State Dental Societies" or some other suitable title or office, whose duties will be to coordinate the efforts of the various state societies and systematize and establish efficiency within their organizations. Much lost motion in time, effort and selecting good talent is now present in our work. This lost motion should be turned to useful account, for example, it happens as often as not that good talent is available for certain subjects nearer the home of a society than that which they employ. Here a saving in expense to the society can be made, also an individual worthy of teaching a subject is recognized and employed, thus mutually benefiting both parties. It should be his further duty to keep on file a list of available clinics, clinicians and essayists for reference and use of the state society officers in outlining, planning and arranging their program. Talent will also avail themselves of this privilege of "listing" their work with him and thus a double purpose is accomplished thru this medium with a minimum expenditure of time and effort on the part of society officers and talent. He could arrange itineraries for talent that would be advantageous as expenses of long journeys could be cut down and absence from office practice could be arranged conveniently for clinician enabling him to appear before more societies at a less fee per society.

The advantage of such an officer in the N. D. A. would be of great importance not only as I have indicated, but in other avenues that would open up and that work for service, system and efficiency, which is the paramount obligation of this organization.

Under direction of each state society, a committee would be formed promoting and having supervision over Study Clubs and further coordinating this work by

supervisory direction under the superintendent of State Dental Societies of the N. D. A., thus giving the national body a voice in helping outline study courses, regulate their activities, receive and approve researches made and the work done by such clubs. Several articles have appeared in our Dental Journals of late in regard to this phase of our educational work. Its importance is recognized and should be encouraged. Small bodies of men, conveniently located, banded together in a congenial club, all interested in some particular subject of their work, can do most valuable research work and equip themselves to meet their problems in a simplified and efficient manner. In the December issue of the Iowa Dental Bulletin, I contributed an article upon the subject, "Study Club Organization," in which I outlined its purposes and methods. I need not repeat these points at this time but wish to say only this in regard to it; Study Clubs should be the starting point of our dental system of post-graduate education. They should be the initiating factor, and the germ of progress engendered in their meetings should find development in higher educational work of the post-graduate college. The Study Club work could be materially helped and advanced by coordination under the direction of a committee in each state society which, in turn, is linked with the superintendent of State Dental Societies of the N. D. A.

In drawing this paper to a close, I wish to leave three pertinent thoughts in your minds.

1. State Societies must recognize the fact that the standard of the profession as a whole is moved forward thru them, and their obligation in meeting the requirements and conditions of today is greater than ever before. Cooperation and coordination are the keys that unlock the door for their success.

2. From the evidence submitted me thru answers to my questionnaire, I believe it important and a desire of the majority that the N. D. A. assume thru some medium as I have suggested, a responsibility of coordinating and standardizing state and district societies.

3. That some method of action be adopted by the N. D. A. that will assist in bringing about a means of establishing post-graduate work upon a real educational basis in our dental colleges with a separate staff of instructors and leading to an advanced degree.

We are all ambitious for success and we are willing to work and learn the things that carry us toward our goal. Continued application is the only way to advance and the possibilities of advancement thru the organized body of which we are a part is unlimited and its importance paramount. Born in obscurity, dentistry has steadily advanced more rapidly than most any other science. It is for the men of today to keep their faces forward and as each individual works for victory for himself, he is constantly helping others toward a higher aim and standard.

Plan for more than you can do,
  Then do it.
Bite off more than you can chew,
  Then chew it.
Hitch your wagon to a star,
  Stick in your seat, and there you are.

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Discussion.

C. R. Lawrence, Enid, Oklahoma.

Dr. Swank's excellent paper brings before us a timely and important subject. There are many things in this paper I should like to discuss in detail, but as

the chairman of this section has limited me to a very few minutes I must content myself by touching on a very few points and these in a general way.

We are all ready to agree with the essayist that we should have better educated dentists and the one thing we need to consider, in discussing this paper, is the best means to bring this about. There is no doubt that most dental societies are not measuring up to their greatest possibility. The principal mission of the dental society today should be to make better dentists. The masses of the dentists are looking to the dental society for their advancement and the society that is not supplying this need is not, in my opinion, measuring up to its greatest possibilities. I agree with the essayist that much of this inefficiency is due to lack of proper organization and inefficient management. Dr. Swank points out to us that no dental society will ever grow beyond the spirit and aim of its executives, which is certainly very true. It is disappointing to know of the number of dental organizations that move along in the same old channel year after year. What we want, need and must have, if we are to make greater progress, are men for guiding heads who have the inclination and are ready and willing to get behind the screens, pull off their coats and go to work. If necessary we should tear down the whole machinery, put new spokes in the wheels where needed, kick out the men who do not fit into the new order of things and bring out a model that is up-to-date and one that will fill the needs and demands of the times.

We must rise above such things as the selection of officers simply because they have been "honorable members" of this society for 25 years. Too many officers forget to be an honor to their society and only think of the society honoring them. I am an advocate of the general manager plan for state societies, especially those that are attempting anything along what we call post-graduat· lines. This solves some of the inefficiency problems. Many officers, while they are not capable of directing things, do have the ability to select a man who is capable of meeting the requirements. Several state societies are adopting the general manager plan and are paying their manager for his services.

I am in hearty accord with Dr. Swank in his recommendation that the National Dental Association should have an officer or committee such as he suggests. I have advocated this from time to time and I believe such an officer would be of great deal more value than three vice-presidents whose sole duty seems to be (?). This matter might be handled, in so far as talent for our meetings is concerned, on the Chautauqua plan. I am of the opinion that if the National Dental Association does not do this thing, some energetic organizer will do it and put the whole thing on a commercial basis. Anyone who has followed the history of the National Dental Association must recognize the fact that it has not been a leader, not even a directing head in many important affairs to the profession. I say this with all due respect to the good work that is being done at this time, but there are still important duties that should be taken up by this organization. It took the National Dental Association many years to even wake up to the importance of reorganization.

Dr. Swank's finding society membership and attendance, with one exception, I think is approximately correct as it coincides very closely with an investigation conducted by the State Dental Society Officers' section of the National Dental Association a few years ago.

Dr. Swank in different parts of his paper has these things to say:

"The greatest problem of dental societies today lies not so much in finding new operative procedures or new methods of practicing our profession as in keep-

ing the majority of the profession abreast of the progress already achieved."

"Only as our dental societies arrange, plan and execute a program along a teaching line do they live up to and hold the attention of their constituent body."

"The dental society must become a real educational center for the dental practitioner."

I heartily agree with all these statements.

He then writes Article IV, of his conclusions and spoils all his previous arguments along these lines, and I wish to take decided issue with him on this article.

I am a dyed in the wool believer in and an advocate of what is generally called the Post-Graduate Dental Meeting, or "Oklahoma Way." My opinion of this plan and arguments in favor of it are not theoretical but are based upon a very close observation of its practical application.

I am sure Dr. Swank's conclusions in Article IV do not fit present conditions. He wants to start too high on the ladder. We must creep before we walk, and if we can creep along for a few years, giving short post-graduate courses to the masses of the profession at our state meetings, it will not be long until many members of our profession will be walking into the colleges for more extended work.

Much might be said with reference to post-graduate courses by the colleges. This work should be encouraged, but, in my opinion, the colleges at this time will not, for various reasons, make any great success of post-graduate instruction. We have not yet arrived at the point where any great numbers of our profession are going to close their offices for a few weeks at a time, travel long distances at much expense in order to secure post-graduate instruction. So it remains for the dental society to step forward and by cooperative effort, give its members just what they want. Cooperation is the keynote in meeting many a situation that never can or will be met in any other way.

We have a vast amount of dental knowledge and the thing we need most at this time, is better distribution service. The state or large district dental society cannot, in my opinion, be of any greater service to its members than by acting as distributing centers. Why should it be necessary for the dentists of California to travel to Chicago in order to secure professional knowledge some man possesses? Would it not be far better and cheaper to have the Chicago man go to California and there present his teaching to a much larger number of men?

To meet the situation in our state, the Oklahoma State Dental Society has been bringing a corps of the foremost dental teachers of the country to us each year to conduct an intensive course of study in the different branches of dentistry, which we call the "Class System of Post-Graduate Instruction." This plan briefly explained is as follows:

First. The full attendance is divided into classes.

Second. Each class takes up the intensive study of one particular subject for a full week under the direction of a competent teacher.

Third. The instruction for each class consists of lectures and practical demonstrations.

Fourth. A special clinic is conducted by each class and where possible the students are given the privilege of doing some practical work under the supervision of the teacher.

Fifth. No member is permitted to take up the study of more than one subject as the different classes are in session at the same time.

Sixth. Each of our teachers give one or more lectures to the whole society, so that the members of each class are permitted to hear lectures on subjects other than the class in which they are enrolled.

It should not require very much of an

imagination to see wherein this plan excels. Too much of our teaching at dental meetings is incomplete and leaves only a superficial knowledge. By this plan each member is given the opportunity of laying a broader foundation which insures success later. It is far better for a man to learn to do one thing well than to attempt to do many things and not succeed at any of them.

These meetings in our State have been a decided success and the essayist is very much mistaken when he says, "attention at such meetings cannot be successfully concentrated." The attention is not only concentrated but our membership percentage of attendance is the largest in the society's history. Such meetings as this cost a great deal of money and, consequently, each member in attendance is required to pay a special fee. This, however, is not a stumbling block, for it is just as easy to secure this special fee as it was to secure a very small membership fee a few years ago. At this time no less than fifteen State dental societies have voted to adopt this plan next year. This is very natural because human nature and dentists are somewhat the same the country over and what is a success in one section is bound to be a success in another, provided the work is carried out along the lines of what other societies have found out to be a correct principle.

Such meetings are a great stimulus to further study and post-gradute work. To bring the rank and file of our profession in direct touch with our leading teachers for short periods, naturally brings about a desire to follow the writings of these teachers and quite ofter leads to further post-graduate work. I have at different times made an investigation of the number of text books that are sold as a direct result of these meetings and invariably found such sales to be quite large. This plan gives the individual dentist the very best of instruction and will certainly have a tendency to eliminate incompetent teachers and the fakirs.

It is my opinion that the regular broken doses of post-graduate instruction, such as we are giving our members, will be much more effective and reach a far greater number of men than the occasional larger doses a few men will take by attending colleges. The one week post-graduate instruction each year, gives a man an opportunity to assimilate and put into practice the things he has learned. It is the constant pounding away that counts in efforts of this kind and not the occasional efforts with long intervals between which is likely to be the case if we depend upon the colleges alone for post-graduate instruction. Not only this, but the association of all our members in one great drive each year carries with it a spirit of the thing that cannot be attained in any other way.

Yes, the possibilities of educating the dentists thru organization are great, provided we make the right application and use of the organizations, but I am of the opinion that this will never be brought about thru the plan suggested by the essayist. (Applause.)

Homer C. Brown, Columbus, Ohio.

The essayist presents a very important subject for consideration, as there is today, in the dental profession, a greater desire for further knowledge than at any previous time. Arguments have been presented by the essayist in favor of a certain procedure in post-graduate work, but some opposition has been advanced by the first discusser to the plan proposed. However, I believe there may be some unification of the best features of each plan, which will prove beneficial to all concerned.

Personally, I am a firm believer in a progressive and constructive dental organization. A few years ago the membership of the National Dental Association was only six to eight hundred, and in face of this it was a difficult thing to

reorganize it. I am reminded of one incident in that connection by observing, just in front of me, Dr. H. Clay Hassell, an ex-president of the southern branch of the National Dental Association who, in 1911, invited me to attend their meeting in Atlanta and present a paper on "The Reorganization of the National Dental Association." I was Recording Secretary of the National at that time and will admit that the subject was somewhat drastic for an officer to discuss, especially in the south. Nevertheless, I responded and made some specific recommendations in strict accordance with our present plan of organization. To say the least, the essayist and his recommendations were very generally cussed and discussed, but three years later it was my good fortune, as President of the National, to be invited to attend the final meeting of the southern branch, after it had rendered years of commendable and efficient service in the progress of dentistry in this particular section of the country. I only refer to this because it shows the trend of events during a brief period of three years. In the meantime the National Dental Association had been reorganized, and the first year after this reorganization we had a membership of approximately twelve thousand five hundred, which should fully demonstrate to everyone the need for such a reorganization. This, and its continued growth, have completely justified all effort expended in that much antagonized movement.

One criticism has been made with reference to state societies conducting post-graduate courses, and that is, officers are elected from time to time without any thought of coordinating the activities of their societies. I grant that there is much merit in that criticism and am in favor of officers being chosen who will cooperate in promoting some prearranged program approved by the society. I think, however, that the post-graduate feature of the state society should only be promoted in its fullest sense in organizations with a limited membership, but on the other hand they should be conducted and accepted as a stimulus to individual study and to influence the organizing of local study clubs. Later, a certain percentage will seek increased opportunities in such institutions as seem best equipped to meet their particular requirements.

In my mind there is some question as to what may develop if most of the dental colleges should undertake to conduct post-graduate courses, and it would seem advisable that some plan of supervision or regulation may be undertaken whereby those institutions meeting certain specific requirements could be approved as fully equipped to give post-graduate courses. Then, after obtaining a sufficient number of credits, I think it is perfectly proper that such an institution should grant some supplemental degree, or at least issue an appropriate certificate of the work completed.

We all appreciate that dentistry today is occupying a more favorable and responsible position than it did a few years ago. The fact of the increased status granted by the federal government; the fact that the medical profession is looking to us for more assistance and a closer cooperation than at any previous time, and the further fact that the public is just beginning to recognize the influence of pathological oral conditions upon the general health of the individual, all of which should stimulate us to make the best possible preparation in order that we can render the most efficient service. Therefore, post-graduate work becomes essential and many of the older practitioners will find it necessary to take advantage of this, or some similar method of further education, in order that we may make our full contribution toward solving many of the complicated problems confronting us at this time, as well as those which may become more complex in the future. (Applause.)

G. Walter Dittmar, Chicago, Ill.

I want to first compliment the essayist. The paper, it seems to me, is a classic; it is well written, is rich in thought and was well delivered. However, like Dr. Lawrence, I feel that there are some exceptions to be taken. I happened to be a member of the reorganization committee of the Illinois State Dental Society, which was the organization that set into motion the proposition which finally resulted in the reorganization of the National Dental Association. We have the general body and the component societies of these subdivisions are in large cities again subdivided, so we have in operation in the State of Illinois about the plan which was outlined. In Illinois we are placed in a different position; we just happen to be more fortunate than the men down in Oklahoma, Arizona, Florida, Maine or Washington. We have, in Chicago, three large dental educational institutions, consequently our men in Illinois are being fed dentistry so much that many are dyspeptic; it is hard to interest the average dentist; you cannot get him to the meetings, the point I want to make is that the plan of Dr. Lawrence, that has worked so successfully is a very excellent one for the man who happens to be far distant from a center such as I happen to be in; it is indeed an ideal plan for those men. It would, however, not be necessary in Illinois. I do not know that I want to say anything more regarding society work. Being a college man I want to speak from that standpoint. The essayist proposed that the various dental colleges should give post-graduate courses, and further proposed, if I understood him correctly, that there should be extension courses; in other words, that a university having a dental school should organize to the extent of sending some of its faculty out over the state in order to educate the dentists of that state. I will say that that also is in contemplation in our state university; in fact, there is now such a movement on foot. There is another thing I want to mention, and that was brought out very forcibly in the President's address last night. In fact, there has been so much done during the past few years calling people's attention to the needs of dentistry, that we find at the present time not one-tenth enough dentists to properly take care of the mouths of the people. We are raising standards right along. Some colleges giving a four-year course at the present time, are talking five years; in fact, one college has already instituted a five-year course. How are we going to supply the demand? The demand is getting greater every minute. The time will come, possibly, when it may adjust itself, but in the meantime the masses will suffer. I wonder whether we ought not go a little slower? In Illinois this last year during the epidemic of influenza we found a great dearth of nurses; the requirements for nurses were raised so that the product was naturally small, and as a consequence the whole state suffered. There was a bill introduced in the last Illinois legislature for education of practical nurses; and unless we take heed the time will come when there will be a similar demand for practical dentists. (Applause.)

E. R. Swank: There were two things I had in mind in presenting this paper. One was to outline the necessity for the standardization of state society work under the coordinating direction of the National Dental Association. The second was to distinguish between the short post-graduate work as conducted in Columbia, and the more intensive post-graduate work with definite requirements leading to an advanced degree. I think Dr. Lawrence said they had less than three hundred members in Oklahoma. From the information I received they had three hundred and twenty-five with an attendance at their state meeting of 160.

Dr. Lawrence: You have this year's membership, not last year.

Dr. Swank: Well, at two hundred, you can divide that into smaller classes, twenty-five or thirty, and that is very practical; with that number you can take the work and carry it out very successfully, but in larger societies it is not so successful. I wanted to distinguish between a short course of three or four days, or a week's duration, and a course covering the theoretical and the practical work of a subject that will lead to a definite degree, that requires attendance or certain credits for its completion in the same manner as is required in post-graduate colleges for advanced degrees in other fields of education.

There was one question that Dr. Dittmar brought up on extension courses. I did not mean to take the work to the dentist, as he explained, but I mean to establish the post-graduate course in certain of our large and centrally located universities, and have the dentist go there for special courses and when enough credits are earned, proper recognition is given him. However, I believe that arrangements could be made whereby certain teachers or extension professors would become available for district Society programs and to assist in special research work of Study Clubs, such arrangements being made by the Superintendent of District Societies of either the State Society or the N. D. A. But the spirit of research engendered in study clubs and the smaller post-graduate courses, should be carried further by study in the larger institutions, and proper credit being given for one or two weeks' study and a degree for perhaps two years' special study. Attention at state society meetings giving so-called post-graduate course cannot be concentrated in a manner that it can be in our universities. I know that to be a fact from the experience I have had with the Iowa State Dental Society. We have an annual attendance at our state meeting of four times the Oklahoma attendance and I do not see how eight hundred members can be successfully divided into classes for practical instruction in any one branch of our professional work, without having twenty-five or thirty different classes and teachers in session at the same time. I am not trying to disparage the Oklahoma way for Oklahoma, but for the larger and the majority of societies, I am of the opinion the Oklahoma way is not applicable.

I wish to thank those men who answered this questionnaire for me and also the men who so kindly honored me by discussing this paper. I thank you. (Applause.)

The Chairman: Because of the lack of time and the importance of the paper we have following this one, this discussion will not be thrown upon the floor. If you have one or two pointed, direct questions to ask I will give you this opportunity at this moment.

Dr. Park, Detroit, Mich.: I would like to ask Dr. Lawrence if the scheme for intensive study as applied in Columbus, is equally applicable to a large society such as they have in New York or Ohio or Illinois?

Dr. Lawrence: I should answer that in this way: I think in a modified form; I do not think it would be applicable as a whole. The classes are limited to about twenty or thirty men. That could be handled by dividing your state societies into sections.

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VOL. 7 OCTOBER, 1920 NO. 10

Editorial Department.

WILLIAM G. EBERSOLE.
November, 1864—October, 1920.

Dr. Ebersole died at Cleveland, Ohio, October 6th, 1920. The passing of Dr. Ebersole marks the exit of one of the prime movers in oral hygiene, the man who was the first to really put mouth hygiene on the dental map. In the early days of the movement, when it was in the minds of most men only a vision, he made it a concrete fact. He labored unceasingly to the detriment of his health, that the world might finally realize the significance of mouth sanitation.

One of his friends has written feelingly of him as follows:

"Dr. William G. Ebersole was born in Carrollton, Ohio, November 18, 1864. His early education was received in the local schools of that community. Dr. Ebersole

spent some six years of his life in the business world, during which time he became acquainted with the dental profession, and saw from the layman's viewpoint a great field for humanitarian dentistry. With this ideal ever before him he sought further education, attending Ohio Northern University and Western Reserve University. From the latter he was graduated from the Dental School in 1895 and from the Medical School in 1896. After entering an active professional life he became more and more absorbed in the Public Health phase of the profession. He served as Chairman of both the Local and National Committees on Oral Hygiene; and later became Secretary-Treasurer of the National Mouth Hygiene Association, which was really a creation of his dreams of public service.

The dental profession has had few men who have devoted their time, thought and energy, even life, to the ideal of teaching and helping the children to appreciate and practice Mouth Hygiene, as did Dr. Ebersole. So earnest and vigorous was he in prosecuting his ideals that many called him a hobbyist and a dreamer. He dreamed, yes, and then worked day and night to realize his dreams. To him, more than to any other one man, do we owe the advance of the Oral Hygiene movement. He established Mouth Hygiene in the Cleveland Public Schools, and there are today in these schools outfits placed through his efforts that bear silent witness to the value of his dreams, for they are now in service every day.

Dr. Ebersole wanted to teach the children to so use and care for their mouths that they would not suffer the pain of dental lesions. This man exerted himself beyond human endurance in his struggle to make real his ideals. Finally his health broke and for more than ten years he has not been a well man; but no one ever heard him complain. He was always hopeful and cheerful during all the operations he was compelled to undergo. Tho his years were less than some, he lived much more than most men, if we count life by good deeds accomplished.

Besides his family, he leaves a host of friends who will remember him to the end of their days. His last illness was of short duration. The end came as a surprise to most of us. Dr. Ebersole passed beyond just after midnight October 6th, 1920."

The Dental Profession and Humanity owe an everlasting debt of gratitude to this practical pioneer in the field of preventive medicine.

On behalf of our thirty thousand subscribers we extend our sympathy and condolence to the family and friends and place this wreath of tribute on the bier of this great man—WILLIAM G. EBERSOLE.

LETTER FROM SIR KENNETH GOADBY.

SS Donnedosa, September 11, 1920.

Dr. Otto U. King, Chicago, Ill.

Dear Dr. King:

Please convey to your Board of Trustees my sincere thanks and deep sense of obligation for the exceedingly happy and profitable time I spent with your association. It has given me the utmost pleasure to meet your association collectively and individually. Thruout my visit there has not been one discordant note. I have been received everywhere with courtesy, kindness and cordiality so that I return to England taking with me an ineffaceable recollection of one of the happiest times it has ever been my good fortune to enjoy.

To yourself, I am more than grateful for the successful efforts you made to help me in all directions.

Believe me to remain

Always yours very sincerely,

KENNETH GOADBY.

CHICAGO DENTAL SOCIETY.

January 27th, 28th, 29th, 1921, are the dates of the fifty-seventh anniversary meeting of the Chicago Dental Society. A cordial invitation is extended to members of all recognized dental societies.

M. M. PRINTZ, Secretary,
25 E. Washington St., Chicago, Ill.

ANNUAL MEETING OF DENTAL PROTECTIVE ASSOCIATION.

The annual meeting of the Dental Protective Association of the United States, will be held in the Palmer House, State and Monroe Streets, Chicago, on the third Monday of December, the 20th, 1920, at 4 P. M., sharp.

The report of the officers will be given, a Board of Directors will be elected and such other business transactions as should come before the Association.

All members are urgently requested to be present.

By order of the Board of Directors,
J. G. REID, President,
E. W. ELLIOT,
Vice-President and Secretary.
D. M. GALLIE, Treasurer.

NEBRASKA DENTAL BOARD.

The next Dental Board examination will be held November 15, 16, 17, 18 and 19 in Lincoln. For information and application, write Mr. H. H. Antles, Secretary, Department of Public Welfare, Lincoln, Nebr.

NEW JERSEY BOARD OF REGISTRATION.

The State Board of Registration and Examination in Dentistry of New Jersey will hold its regular examination in the State House, Trenton, N. J., December 6, 7, 8, 9, and 10, 1920. License fee, $25.00; re-examination fee, $10.00.

Practical tests required: Insertion of an approximal gold filling with the approximating tooth in position, compound approximal amalgam filling, and a silicate filling—candidate must furnish his own patient; taking of impression, bite, selection of teeth, articulation, trial plate—candidate must furnish his own patient; practical examination in mouth diagnosis.

Attention is directed to the following quotation from the dental law of New Jersey: "Applicant shall present to said board a certificate from the Commissioner of Education of this State, showing that before entering a dental college, he or she had obtained an academic education consisting of a four-year course of study or the equivalent thereof." In accordance with this law the secretary will issue application blanks only upon presentation of the required certificate from the Commissioner of Education, State House, Trenton, N. J.

Applications must be filed complete ten days before the date of the examinations. Address all communications for further particulars to

JOHN C. FORSYTH, Sec'y.,
429 E. State St., Trenton, N. J.

THE STATE UNIVERSITY OF IOWA.

University of Iowa College of Dentistry and Dental Alumni Clinic will be held at dental building, Iowa City, Iowa, November 12th, 1920.

JOHN VOSS, President,
Dental Alumni Association.

SOUTH DAKOTA STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the South Dakota State Board of Dental Examiners will be held in Sioux Falls, South Dakota, January 11th, 12th, 13th and 14th, 1921, beginning promptly at 9:00 A. M., January 11th.

All applications must be in the hands of the Secretary by January 1st. Fee for examination, $25.00. No reciprocity or interchange. Full information and application blanks may be received by addressing

L. R. WALSTON, Secretary,
Redfield, So. Dak.

PHOTOGRAPH OF EVERY OFFICER—EXCEPT ONE.

The photograph of every past officer of the Illinois State Dental Society is in our album with one exception. Dr. Charles O. Dean left our state in 1872, and was for some years located at San Francisco. Can any person give any information concerning this man or his family?

G. H. HENDERSON,
340 N. Central Ave.,
Chicago, Illinois.

IDAHO DENTAL EXAMINATION.

The next examination for dentists will be held in this office on January 11, 1921. For application blank and law pertaining to this profession, address Bureau of License, Boise, Idaho.

PAUL DAVIS, Director.

MICHIGAN STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the Michigan Dental Board for examinations will be held at the Dental College, Ann Arbor, Michigan, November 8 to 13, 1920. Those desiring further particulars may write to B. S. Sutherland, Sec.-Treas., Owosso, Mich.

OKLAHOMA STATE BOARD MEETING.

Next examination December 27, 1920, Senate Chamber State Capitol Bldg., Oklahoma City, L. M. Doss, Secretary-Treasurer, 245 American National Bank Bldg. No reciprocity, no temporary license.

MARYLAND BOARD OF DENTAL EXAMINERS.

The Maryland Board of Dental Examiners will meet for examination of candidates for certificates on November 10, 11 and 12, in Baltimore at the Baltimore College of Dental Surgery at 9 A. M.

For application blanks and further information apply to

F. F. DREW, Secretary,
No. 701 N. Howard St., Baltimore, Md.

BOARD OF DENTAL EXAMINERS OF CALIFORNIA.

"The next meeting of the Board of Dental Examiners of California for the purpose of examining applicants for a license to practice dentistry in that state will be held in the city of Los Angeles, beginning on December 6, 1920 at 9:00 A. M. Each applicant shall file with the secretary of the Board 15 days before that date the following credentials: (1) diploma or certificate of graduation from a reputable dental college approved by the Board; (2) a diploma from an accredited high school or a certificate

signed by a State Superintendent of Public Instruction (or similar officer) to the effect that the applicant has had scholastic preparation equivalent in all respects to that demanded for graduation from a high school giving a four years' course of instruction. In lieu of high school credentials, an applicant who has been a licensed practitioner of dentistry of some other state of the United States for a period of at least five years, shall file such license or licenses which will be accepted; (3) a testimonial of moral character; (4) a recent unmounted photograph of the applicant."

For further information, address the secretary,

C. A. HERRICK, D. D. S.,
133 Geary St., San Francisco, Cal.

THE SOCIETY OF THE PIONEERS OF THE NATIONAL DENTAL ASSOCIATION.

At a meeting called by Dr. A. W. Shields of Crothersville, Ind., on August 26th, 1920, during the session of the National Dental Association at Boston, Mass., it was voted to organize the society of the pioneers of the association, who started their professional life at, or about the year 1885. This organization was formed for the purpose of bringing about a better acquaintance among the older members, a more fraternal feeling, to renew good fellowship, to discuss the value of old methods, and to attend to any other matters that may be brought before them.

The meetings are to be held on the second morning of each session of the National Dental Association at 10 o'clock.

At this meeting the following officers were elected:

For President: Dr. A. W. Shields of Crothersville, Ind.

For Vice President: Dr. Forrest G. Eddy of Providence, R. I.

For Secretary and Treasurer: Dr. R. R. Andrews of Cambridge, Mass.

Members, Addresses and Date They Entered Practice.

Dr. S. W. Shields, Crothersville, Ind., 1872.

Dr. Wm. H. Hertz, Hazelton, Penn., 1868.

Dr. H. E. Laughan, Ogdensburg, N. Y., 1884.

Dr. W. F. Andrews, Springfield, Mass., 1876.

Dr. Forrest G. Eddy, Providence, R. I., 1875.

Dr. Mark F. Finley, Philadelphia, Pa., 1887.

Dr. G. H. Harrington, Louisville, Ky., 1887.

Dr. Edward G. Link, Rochester, N. Y., 1888.

Dr. Robert R. Andrews, Cambridge, Mass., (Residence, Waban, Mass.) 1869.

Dr. M. C. Smith, Lynn, Mass., 1885.

Dr. W. W. Mann, New Bedford, Mass., 1887.

Dr. C. F. Harris, Lowell, Mass., 1886.

Dr. R. R. Powell, Wisconsin, 1885.

Dr. W. H. Lowell, Lancaster, Pa., 1885.

Dr. E. C. Blaisdell, Portsmouth, N. H., 1878.

Dr. V. H. Jackson, New York, N. Y., 1877.

Dr. Washburn E. Page, Boston, Mass., 1873.

Dr. W. W. Smith, Rochester, N. Y., 1872.

Dr. Waldo E. Boardman, Boston, Mass., 1885.

Dr. T. E. Tibbetts, Rockland, Maine, 1875.

Members of the National Dental Association, who commenced their professional life about the year 1885, are requested to forward their names to

DR. R. R. ANDREWS,
4 Brattle Street,
Cambridge, Mass.

DENTAL CORPS ORDERS FROM WAR DEPARTMENT.

DENTAL CORPS.

Lieut. Col. Frank P. Stone from duty at Fort Logan, Colo., to Fort Crook, Nebr., Seventh Corps Area for duty as assistant to surgeon.

Lieut. Col. George D. Graham from duty at Jefferson Barracks, Mo., to Baltimore, Md., Third Army Corps Area, for duty as assistant to surgeon.

Lieut. Col. John A. McAllister, Jr., from duty at Lovell General Hospital, Fort Sheridan, Ill., to Fort Benjamin Harrison, Ind., Fifth Army Corps Area for duty as assistant to surgeon.

Maj. John H. Snapp from duties at Lovell General Hospital, Fort Sheridan, Ill., to Fort Leavenworth, Kans., disciplinary barracks for duty.

Maj. Lowell B. Wright from duties at Fort Leavenworth, Kans., to Second Corps Area, Governors Island, N. Y., for assignment to duty and station.

Capt. George M. Krough from duties at Fort Snelling, Minn., to Carlisle Barracks, Pa., medical department field service school for duty.

Capt. Maximilian P. Bergeron, First Lieutenants George C. Ackley, Lynn D. Blanchard honorably discharged.

First Lieut. James J. Weeks from duty at Lovell General Hospital, Fort Sheridan, Ill., to Fort Snelling, Minn., for duty.

—*Army and Navy Register, September 11.*

Lieut. Col. Archibald L. Miller, Capts. James M. Ackley, Leon M. Muedeking, Arthur G. Buehler, George R. Ellis, 1st Lieuts. Henry A. Bartels, Edward Goldberg, Raymond S. George, John F. Dunfee honorably discharged.

Maj. Frederick H. Saunders from duty at O'Reilly General Hospital, Oteen, N. C., to Camp Alfred Vail, N. J., for duty.

Maj. Brantley I. Newson from duty at Hoboken, N. J., to Walter Reed General Hospital, D. C., for duty.

Maj. Harold E. Albaugh from duty at Camp Sherman, Ohio, to Fort Riley, Kans., for duty.

Capt. Harold H. Buehler from duty at Hoff General Hospital, S. I., N. Y., to 2d corps area, for duty.

Capt. Richard C. Hughes from duty at camp Grant, Ill., to 8th corps area, for duty.

1st Lieut. Walter L. Knowles from duty at O'Reilly General Hospital, Oteen, N. C., to 8th corps area for duty.

1st Lieut. Harold S. Whitney from duty at Hoff General Hospital, S. I., N. Y., to 1st corps area for duty.

—*Army and Navy Register, September 25.*

APPOINTMENTS IN THE REGULAR ARMY.

The War Department on September 3 announced the following appointments as commissioned officers in the Regular Army:

Dental Corps.

Captains.

Albert L. Alexander, Lakehurst Prov. Ground, N. J.

Clyde W. Allen, Camp Sherman, Ohio.

Daniel Bratton, Camp Zachary Taylor, Ky.

Arthur G. Buehler, Hoff General Hospital, Staten Island, N. Y.

Harold H. Buehler, Hoff General Hospital, Staten Island, N. Y.

Joseph E. Eden, Camp Taylor, Ky.

James B. Harrington, Fort Jay, N. Y.

Herbert E. F. Tiessing, Camp Mercedes, Tex.

First Lieutenants.

Robert C. Craven, dental unit 1, Camp Grant, Ill.

Jay R. Haskin, Camp Funston, Kans.

Edward J. Kubesh, U. S. Military Academy, West Point.

Harry T. Ostrum, Fort Logan, Colo.

Earle Robbins, camp hospital, Marfa, Tex.

Hugh J. Ryan, post hospital, Fort Ontario, N. Y.

Melville A. Sanderson, post hospital, Fort Andrews, Mass.

Oscar W. Thompson, camp hospital, Camp Taylor, Ky.

—*Army and Navy Register, September 11.*

Captains.

Roy L. Bodine, Walter Reed Hospital, Washington, D. C.

Joseph D. Eby, Walter Reed Hospital, Washington, D. C.

First Lieutenants.

Arthur E. Brown, 405 Lighthouse St., Erie, Pa.

Herman J. Lambert, 56th inf., Camp Funston, Kans.

Walter D. Love, Omaha bl. sch., Omaha, Neb.

Rollo Lown, post hospital, Fort Leavenworth, Kans.

Arne Sorum, hdqrs. A. T. S., Hoboken, N. J.

—*Army and Navy Register, September 18.*

The War Department on September 18 announced the following appointments as commissioned officers in the Regular Army (Dental Corps) as a result of the recent examination held in accordance with the congressional act of June 4, 1920:

First Lieutenants.

Vivian E. Brown, Fort George Wright, Wash.

Ralph O. Leonard, 607 Broadway, Gary, Ind.

Howard A. Hale, Letterman General Hospital, San Francisco.

Milfred I. Merritt, 160 Sonoita St., Nogales, Ariz.

Frank W. Small, camp hospital, Camp Lewis, Wash.

Milton J. Damlos, dental infirmary No. 1, Camp Meade.

—*Army and Navy Register, September 25.*

DIRECTORY OF STATE SOCIETIES FOR 1920-1921.

Alabama—Montgomery, April 12, 13, 14, 1921.
President: C. B. Fowlkes, Brown-Marx Bldg., Birmingham.
Secretary: S. B. Hopkins, Greenville.
Treasurer: Geo. C. Bledsoe, Cullman.

Alaska—
President: Charles Daggett, Cordova.
Secretary: L. S. Keller, Skagway.
Treasurer: L. S. Keller, Skagway.

Arizona—Phoenix, November 10, 11, 12, 1920.
President: John T. Dunlap, Jr., Goodrich Bldg., Phoenix.
Secretary: J. C. Roberts, 1st Ave. and Adams St., Phoenix.
Treasurer: J. C. Roberts, 1st Ave. and Adams St., Phoenix.

Arkansas—Little Rock, May 1921.
President: E. L. Miley, Blytheville.
Secretary: W. F. Williams, 24 Urquhart Bldg., Little Rock.
Treasurer: W. F. Williams, 24 Urquhart Bldg., Little Rock.

Southern California—Los Angeles, June, 1921.
President: Frank B. Damron, 1st Nat. Bk. Bldg., Long Beach.
Secretary: Bert Boyd, 1010 Story Bldg., Los Angeles.
Treasurer: C. C. Noble, Wright-Collander Bldg., Los Angeles.

California State—
President: Louis Graham, 516 Sutler St., San Francisco.
Secretary: John W. Leggett, 323 Geary St., San Francisco.
Treasurer: John D. Millikin, 323 Geary St., San Francisco.

Colorado—
President: Arthur G. Kelly, 810 Metropolitan Bldg., Denver.
Secretary: Harry W. Wilson, 604 Metropolitan Bldg., Denver.
Treasurer: Wm. Smedley, Sr., 604 California Bldg., Denver.

Connecticut—Waterbury, April 19, 20, 21, 1921.
President: F. J. Buchanan, 111 West Main St., Waterbury.
Secretary: C. F. Gibbs, 884 Main St., Bridgeport.
Treasurer: J. F. Barton, 197 Asylom St., Hartford.

Delaware—
President: Philip C. Southard, 1004 Jefferson St., Wilmington.
Secretary: Edward F. Cullen, Ford Bldg., Wilmington.
Treasurer: Philip A. Traynor, 807 Washington St., Wilmington.

District of Columbia—Washington, D. C., October 12, 1920, and twice monthly from October to June inclusive.
President: C. A. Hawley, 1624 I St., N. W., Washington, D. C.
Secretary: W. M. Simkins, 720 Woodward Bldg., Washington, D. C.
Treasurer: Mark F. Finley, 1928 I St., N. W., Washington, D. C.

Florida—Gainesville, June, 1921.
President: C. J. Caraballo, Citizens Bank Bldg., Tampa.
Secretary: H. B. Pattishall, 332 St., James Bldg., Jacksonville.
Treasurer: H. B. Pattishall, 332 St., James Bldg., Jacksonville.

Georgia—Macon, June 8, 9, 10, 1921.
President: M. M. Forbes, Hurt Bldg., Atlanta.
Secretary: J. Russell Mitchell, Candler Bldg., Atlanta.
Treasurer: Spencer R. Atkinson, Jr., Candler Bldg., Atlanta.

Hawaiian Islands—Honolulu, October 12, 1920.
President: J. M. Whitney, 401-2 Boston Bldg., Honolulu.
Secretary: J. H. Waddell, 305 Boston Bldg., Honolulu.
Treasurer: C. B. High, 53-4-5 Young Bldg., Honolulu.

Idaho—Boise.
President: L. T. Phillips, Jerome.
Secretary: M. J. Goode, Filer.
Treasurer: B. H. Hudson, Blackfoot.

Illinois—Peoria, May 10, 11, 12, 1921.
President: J. P. Luthringer, 507 Jefferson Bldg., Peoria.
Secretary: Arthur G. Smith, 511 Central Natl. Bk. Bldg., Peoria.
Treasurer: T. L. Grisamore, 29 E. Madison St., Chicago.

Indiana—Indianapolis, May 16, 17, 18, 19, 1921.
President: A. R. Ross, Lafayette.
Secretary: A. J. Kimm, 705 Citizens Bank Bldg., Evansville.
Treasurer: Chas. A. Priest, Marion.

Iowa—Des Moines, May 3, 4, 5, 1921.
President: Charles N. Booth, Cedar Rapids.
Secretary: Earle S. Smith, 635 So. Governor St., Iowa City.
Treasurer: Frank Fourt, Fairfield.

Kansas—Wichita, April, 1921.
President: F. A. Koester, Mills Bldg., Topeka.
Secretary: C. K. Weaver, Clay Center.
Treasurer: E. C. Glass, Independence.

Kentucky—Louisville, April, 1921.
President: W. W. Taylor, Lafayette Bldg., Lexington.
Secretary: W. M. Randall, 1035-2nd St., Louisville.
Treasurer: R. P. Keene, Owensboro.

Louisiana—Baton Rouge.
President: O. J. Ory, Garyville.
Secretary: Geo. B. Crozat, Maison Blanche Bldg., New Orleans.
Treasurer: C. W. Swords, Maison Blanche Bldg., New Orleans.

Maine—
President: Edward A. Sheehy, Rumford.
Secretary: B. C. Graffam, 655 Congress St., Portland.
Treasurer: I. E. Pendleton, Pine St., Lewiston.

Maryland—Baltimore, June, 1921.
President: B. Lucien Brun, 825 Park Ave., Baltimore.
Secretary: J. H. Ferguson, 712 N. Eutaw, Baltimore.
Treasurer: H. A. Wilson, Calvert Bank Bldg., Baltimore.

Massachusetts—Boston, May 4, 5, 6, 1921.
President: Frank P. Simpson, Pittsfield.
Secretary: W. Vernon Ryder, 175 Newbury St., Boston.
Treasurer: Joseph T. Paul, 419 Boyland St., Boston.

Michigan—Detroit, April, 1921.
President: Clare G. Bates, Durand.
Secretary: Claude S. Larned, 614 Post Bldg., Battle Creek.
Treasurer: Edwin J. Chamberlin, 519-21 Ashton Bldg., Grand Rapids.

Minnesota—St. Paul.
President: W. H. MacNeil, 512 P & S Bldg., Minneapolis.
Secretary: C. H. Turnquist, 338 LaSalle Bldg., Minneapolis.
Treasurer: T. D. Abernathy, Dental Bldg., Rochester.

Mississippi—Jackson.
President: J. N. C. Moffat, Shelby.
Secretary: W. F. Beavers, Meridian.
Treasurer: C. K. Bailey, Grenada.

Missouri—Springfield, April 25, 26, 27, 1921.
President: J. F. Wallace, Canton.
Secretary: H. C. Pollock, 724 Metropolitan Bldg., St. Louis.
Treasurer: J. F. McClellan, Moberly.

Montana—
President: S. E. Brice, Lewiston.
Secretary: F. W. Adams, Billings.
Treas.: Geo. H. Phase, Great Falls.

National Capital—George Washington University, October 5, 1920.
President: Manly M. Michaels, 921 15 St., N. W., Washington, D. C.
Secretary: Starr Parsons, 1309 L St., N. W., Washington, D. C.
Treasurer: John E. Black, 825 Vermont Ave., Washington, D. C.

Nebraska—Omaha, May, 1921.
President: F. F. Whitcomb, Paxton Block, Omaha.
Secretary: H. E. King, 446 Bee Bldg., Omaha.
Treasurer: E. W. Fellers, Beatrice.

Nevada—
President: C. F. Watkins, Reno.
Secretary: John V. Ducey, Bank Bldg., Goldfield.
Treasurer: E. Marven, Nixon Block, Reno.

New Hampshire—Manchester.
President: J. G. Hammond, Somersworth.
Secretary: Louis I. Moulton, 15 N. Main St., Concord.
Treasurer: William A. Young, 40 No. Main St., Concord.

New Jersey—
President: John C. Forsyth, 429 East State St., Trenton.
Secretary: F. K. Heazelton, 223 East Hanover St., Trenton.
Treasurer: Chas. Faupel, 484 Bergen Ave., Jersey City.

New Mexico—Albuquerque, June, 1921.
President: C. F. Helmig, Raton.
Secretary: Melvin R. Chapin, E. Las Vegas.
Treasurer: Melvin R. Chapin, E. Las Vegas.

New York—New York City, May 11, 12, 13, 1921.
President: W. H. Waugh, 576 Fifth Ave., New York City.
Secretary: A. P. Burkhart, 52 Genesse St., Auburn.
Treasurer: G. H. Butler, University Bldg., Syracuse.

North Carolina—
President: J. H. Judd, Fayetteville.
Secretary: H. O. Lineberger, Raleigh.
Treasurer: R. M. Morrow, Burlington.

North Dakota— Minot, May, 1921.
President: Fred W. Ross, Cooperstown.
Secretary: Solon Crum, Fargo.
Treasurer: J. H. Wells, Harvey.

Oklahoma—
President: C. W. Day, Unity Bldg., Tulsa.
Secretary: J. F. Morrow, Stephenson Bldg., Enid.
Treasurer: T. W. Sorrels, Colcord Bldg., Oklahoma City.

Ohio—Columbus, Nov. 30, Dec. 1-2, 1920,
President: C. W. Mills, Chillicothe.
Secretary: F. R. Chapman, 305 Schultz Bldg., Columbus.
Treasurer: A. O. Ross, 807 N. High, Columbus.

Oregon—Portland.
President: Clyde Mount, Oregon City.
Secretary: W. C. Shearer, Stevens Bldg., Portland.
Treasurer: F. E. Gulick, Morgan Bldg., Portland.

Pennsylvania—Philadelphia, May 3, 4, 5, 1921.
President: R. H. D. Swing, 1623 Walnut St., Philadelphia.
Secretary: W. L. Fickes, East End Trust Bldg., Pittsburgh.
Treasurer: A. B. Miller, 299 Wyoming Ave., Kingston.

Rhode Island—Providence, October, 1920.
President: Ernest A. Charbonnel, Providence.
Secretary: Joseph P. Massicotte, Providence.
Treasurer: Howard W. Church, Bristol.

South Carolina—Greenville, June, 1921.
President: H. B. Hair, Columbia.
Secretary: Ernest C. Dye, Greenville.
Treasurer: A. H. Corley, Edgefield.

South Dakota—Sioux Falls.
President: A. O. Stutenroth, Watertown.
Secretary: Ernest W. Elmen, Sioux Falls.
Treasurer: Ferdinand Brown, Sioux Falls.

Tennessee—Nashville.
President: J. W. Winn, 217½ 5th Ave., Nashville.
Secretary: C. E. Byington, James Bldg., Chattanooga.
Treasurer: B. H. Johnson, Doctors' Bldg., Nashville.

Texas—Dallas.
President: G. Waller Staples, Wilson Bldg., Dallas.
Secretary: J. G. Fife, 736 Wilson Bldg., Dallas.
Treasurer: J. G. Fife, 736 Wilson Bldg., Dallas.

Utah—Salt Lake City, June, 1921.
President: W. A. Squires, Judge Bldg., Salt Lake City.
Secretary: Fred W. Meakin, Judge Bldg., Salt Lake City.
Treasurer: Fred W. Meakin, Judge Bldg., Salt Lake City.

Vermont—March 16, 17, 18, 1921.
President: A. L. Pettee, Brattleboro.
Secretary: H. B. Small, Burlington.
Treasurer: Thomas Mound, Rutland.

Virginia—Richmond, October, 1921.
President: M. B. Rudd, Chamber Commerce Bldg., Richmond.
Secretary: Harry Bear, Professional Bldg., Richmond.
Treasurer: W. N. Hodgkin, Warrentown.

Washington—Vancouver, B. C., July, 1921.
President: Jos. F. Alexander, Cobb Bldg., Seattle.
Secretary: Wm. B. Power, Cobb Bldg., Seattle.
Treasurer: Wm. B. Power, Cobb Bldg., Seattle.

West Virginia—Bluefield, April 11, 12, 13, 1921.
President: J. N. Mahan, Capitol St., Charleston.
Secretary: N. P. MacDermid, Capitol St., Charleston.
Treasurer: D. C. Clark, Morgantown.

Wisconsin—July 12, 13, 14, 1921.
President: C. W. Hall, Alhambra Bldg., Milwaukee.
Secretary: R. W. Huegel, 104 King St., Madison.
Treasurer: Adolph Gropper, C. K. Goldsmith Bldg., Milwaukee.

Wyoming—
President: W. H. Andrew, Cheyenne.
Secretary: Wm. Kocher, Casper.
Treasurer: Peter Appel, Jr., Hynds Bldg., Cheyenne.